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The Oil Man's Calendar

OCT.	
16–17	**American Association of Petroleum Geologists, Pacific Section, Los Angeles.**
16–18	**American Institute of Mining & Metallurgical Engineers, Petroleum Division, Dallas.**
20–22	**National Stripper Well Association, Tulsa.**
20–22	**Independent Petroleum Association of America, Tulsa.**
24	**Louisiana-Arkansas Division, Mid-Continent Oil & Gas Association, Shreveport.**
29–30	**American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.**
31	**California Natural Gasoline Association, Los Angeles.**
NOV.	
2– 7	**American Petroleum Institute, Annual Meeting, San Francisco.**
13–14	**American Association of Oil Well Drilling Contractors, Annual Meeting, Dallas, Texas.**
DEC.	
3	**New Mexico Oil & Gas Association, Artesia.**
5	**Oklahoma Stripper Well Association, Tulsa.**

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The Changing Panorama

Moffett Builds Fire Under Ickes

Britain's Offer of Tanker Return Reluctantly Admitted

Late last week James A. Moffett, chairman of the board of the California-Texas Oil Company, was quoted in the newspapers as charging that Britain then had more tankers than she started the war with, that England was anxious to return some of the "diverted" American tankers to the United States, but that these tankers on orders of Petroleum Coordinator Ickes' office have been sent to the Dutch East Indies, South America and Australia.

He was asked why the offer of the English to return the tankers had not been accepted, and answered "I'd like to know."

When the statement appeared in the papers it created something of a sensation, being the first time an oil man had risen up and spoken a piece since the Secretary of the Interior became Petroleum Coordinator. The comment was freely made that either Moffett or Harold L. Ickes was on a hot spot. Friends of Moffett predicted dire things for him if the facts were not found to bear out his statement, but declared that they did not believe that he would have gotten out on a limb unless he had the facts.

On the other hand considerable speculation was indulged in as to what would be the status of the petroleum coordinator if the charges were investigated, say by the Senate committee, and found to be true. In such an event, it was opined, Ickes would be on a very hot spot because it would be quite easy to draw a conclusion, if the facts were found to be as Moffett had asserted, that Ickes was indifferent to the plight of American consumers, and even that he might actually be trying to create a shortage in transportation, or be deliberately willing to prolong it unnecessarily.

What the few days following Moffett's statement would bring was speculated on with keenest interest.

Then Petroleum Coordinator Ickes spoke, on Tuesday. As quoted in the newspapers of Wednesday morning, he said that Britain, "who only a month ago had asked for additional tankers," now believes that she can release, "at least temporarily," a limited number of the 50 to 80 (the Coordinator has never been specific on the number) American vessels made available to her.

Quoting the morning newspapers further, "The release of the tankers is considered possible by the British," Ickes declared, "in view of the greatly diminished sinkings and the other benefits of the policies undertaken by the United States, including the naval policy recently announced by the President; also, the realization of operating efficiencies brought about by joint effort."

He did not say what effect return of the tankers would have on the petroleum situation in the East, the newspaper report read, but indicated that some of the released vessels might be assigned to hauling molasses, at the request of the army and navy munitions board. Molasses is used in manufacturing ethyl alcohol, essential to the manufacture of munitions.

Ickes emphasized that any tankers returned by Britain would be subject to reassignment to the British service "if the need should arise," the news dispatch concluded.

Well, is he off or is he on?

Committee Shunned . . .

While Messrs. Ickes and Davies of the Office of Petroleum Coordination failed to convince the Maloney congressional investigating committee that there was an oil shortage in the East Coast, they apparently have succeeded in making a good case to the Supply and Priorities Allocation Board.

While the debate continues to rage in Washington as to whether there is an oil shortage or not, more stringent rationing restrictions were imposed on the Atlantic Seaboard states for October. It is significant that for the first time the rationing orders are issued by the SPAB, which means that they are official.

Consequently it appears that what the Maloney investigating committee thinks of the matter becomes relatively unimportant. While much readable copy has been furnished by the controversial nature of the hearings held by the committee, its findings apparently are meaningless so far as the national oil policy is concerned.

Needs of Aviation Growing Fast

American Plane Makers Are Getting Into Their Stride

Further indication that a material increase of United States aviation gasoline manufacturing facilities is necessary, is the all-time peak output attained in making of airplanes during September. A total of 1914 planes were delivered during the month, or at a rate of nearly 24,000 per year. This represents a 100 percent increase over the rate of manufacturing during the first two months of this year.

Additional increases are anticipated. A year ago engines were a bottleneck in the United States aircraft industry. Thanks largely to the mass production methods of American automobile makers, industry has now caught up with aviation's demand for power. More than a million horsepower per week is being delivered, and this will soar immediately as Packard and Ford engine plants are just now starting production that is expected to rise to 2000 monthly by Christmas.

The gain is not alone in numbers. Engine horsepower has climbed steadily. Engines up to 2200 horsepower are now in use, and 4000 horsepower units have been designed and may be presently in the air.

These developments mean more and more aviation gasoline will be needed.

A Lot of Gasoline . . .

If all the drivers in the United States Fourth Motorized Division, stationed at Fort Benning, Georgia, were to attempt to fill up their gasoline tanks at one time you can bet it would be necessary to send out an SOS for all railroad tank cars in the vicinity. For about 161,000 gallons of gasoline would be required.

That is a lot of gasoline. If your car gets 20 miles to the gallon, the 161,000 gallons for one "fill-up" by the Fourth Motorized Division would take you 3,220,000 miles. Or if you drive about 25,000 miles per year, that 161,000 gallons would last you about 124 years.

The average filling station would

be sold out completely before even the smaller units had finished "gassing" for only super filling stations have capacities for storing as much as 1000 gallons at a time. So the division quartermaster must make detailed arrangements in advance whenever the division is on the road.

Tanker Sinkings . . .

More tanker diversions could strike American oil shipping like a tropical hurricane. Right now there is no ominous talk of British need for more boats. On the contrary, Britain is self-congratulatory on reduced losses of tonnage, which should mean fewer losses of tankers as well as freighters. But it is significant that reduced sinkings coincide with preoccupation of the Luftwaffe on the Eastern front. Heinkels and Messerschmitts, diverted to the Russian scene, are missed by the U-boats for spotting their prey; and if and when the Nazi struggle in the East permits, resumption of overhead-undersea conspiracy against British shipping, losses may be expected to mount.

British Supply . . .

While the United States wrangles over whether an oil shortage exists on the East Coast, with the petroleum coordination office taking the lead in insisting that it does, British government policy apparently continues to lag far behind public opinion on the question of petroleum consumption restriction. The press in England is full of instances of alleged wastage, both by civilians and more lately by army authorities. Considerable indignation is being expressed at the lightness of sentences against offenders of existing restrictions.

The British oil supply situation has been summed up in a recent issue of "The Economist," a journal with the scope and standing of, say, the "Wall Street Journal." It states the shortage is serious for two reasons, (1) necessity for payment in foreign exchange, and (2) the shortage in tanker tonnage. The first has been removed by the Lend-Lease Act, so far as the United States is concerned, but the second remains despite United States diversion of tankers. Great Britain, the article asserts, has lost half its ocean-going tanker tonnage. New shipping capacity is scarce, and will be for the duration of the war, it continues.

The article declares that these factors demand rigorous economy. It advocates permitting of only essential use, substitution of coal and its derivatives for oil wherever possible, and reclamation of waste products. Under the first head, all private motoring should be abolished. While the total saved by this step, continues the article, would be small, every possible saving is important and urgent.

Even if every possible conservation step is taken, intake must remain large. Therefore, shipping space must be used to yield the highest possible rate of oil imports.

Mexico . . .

Reported plans for settlement on a cash basis of the United States-Mexico oil expropriation controversy, have been received with some misgivings by British and Netherlands oil circles. Any arrangement of terms on these lines, it is believed, would be considered disappointing to the English interests involved. It is recognized that American companies may be subjected to pressure from government circles, with anxiety to settle all troubles between the two countries likely to bring requests that oil concerns accept terms they otherwise might consider inadequate.

The British political interest in the matter is less direct and the attitude of the British oil interests concerned is more detached. The original attitude of these interests was nothing short of a return of the expropriated properties. If this was not adhered to, a return of the properties on a 40- or 50-year concession basis, instead of the former perpetual concession is probably the least that would be satisfactory to English companies.

Toluol

Ready to go five weeks ahead of schedule, the Baytown Ordnance Works at Baytown, Texas, has been turned over by the builders, Humble Oil & Refining Company, to the Ordnance Department of the Army for operation, and will be turned back, under contract, for the manufacture of toluol by the Humble company.

The plant, which was erected and equipped at a cost of $12,671,477, is expected to begin production by November 1 under an entirely new manufacturing process developed by Humble Oil & Refining Company with the assistance of Standard Oil Development Company.

The plant comprises a total of 17 buildings, including 3 main operating units, a distillation unit, hydroformer unit and an extraction plant. The construction included 63,300 feet of water lines, 9,550 feet of gas lines, 50,000 feet of electric lines, 11,000 feet of sewer lines, 155,250 feet of oil lines, 4,630 feet of steam lines, 2,760 feet of air lines, two miles of roads and 1.7 miles of railroad. A huge cooling tower, in which 350,000 board feet of California redwood were used and in which fifty 5-foot fans will be used to cool the water, is a feature of the project.

The toluol produced by the plant will be used for TNT, the principal high explosive used in artillery shells, and DNT, used in the manufacture of smokeless powder.

RAF vs. Luftwaffe: 100-Octane Counts . . .

The American oil industry is due a substantial amount of credit for the air-superiority lately claimed for the British by their Prime Minister. Back of the indicated emergence of the RAF into better position than the Luftwaffe is American-made 100-octane gasoline—and the assurance of more of it—as well as American-made aircraft. Using the high-octane fuel, British planes are able to fly faster and higher than the German planes, which must use lower-octane gasoline.

Although several German planes downed in England were found to have 100-octane gasoline in their tanks, probably made by blending, many others were reported to have used 65-, 75-, and 87-octane fuel.

Having ample raw materials but limited refining facilities, the United States currently is producing over 40,000 barrels daily of 100-octane gasoline; and output will be up to 100,000 a day before the middle of next year, while the refinery expansion program now being inaugurated through the petroleum coordinator's office will step capacity up to 120,000 barrels daily, or three times the present production, under the plans to supply Russia as well as Britain and the United States.

Meanwhile, the Nazis will have to worry over quantity as well as quality of aviation fuel and other petroleum products. By qualified American engineers, it is calculated that the Axis powers in the Russian conflict currently are using oils at the rate of about 225,000,000 barrels a year.

Washington Roundup

Offer of tankers back taken as evidence charges of inefficient operation . . . House committee proposes investigation of East Coast shortage . . . Shipments of oil to Japan has been stopped all sources . . . Lend-lease purchases big

By B. F. LINZ, Washington Correspondent

PROSPECTIVE return of 10 to 15 of the tankers "loaned" to Britain headlined the oil week in Washington as House leaders prepared for an investigation of their own into the Atlantic Coast supply situation.

Announcement that England was preparing to turn back some of the vessels assigned to the "shuttle" service was seen in some quarters as an admission of the truth of charges that the borrowed boats had not been operated efficiently, although government officials naturally refused to comment on that matter and assigned better conditions in the Battle of the Atlantic as the reason.

With a House subcommittee "rarin' to go" into the East Coast situation under instructions from Chairman Bland of the Merchant Marine committee, Chairman Vinson of the Naval Affairs Committee urged an inquiry by a joint board on which the Army, Navy, coordinator and OPM would be represented, into the merits of a pipe line from the producing fields to the seaboard, with a report to be submitted by next January 5.

Other developments of the week were the disclosure that shipments of oil to Japan have been cut off entirely by not only the British in the Near East and the Dutch East Indies but also by the United States. Almost at the same moment it was revealed that $90,000,000 worth of oil products will be shipped under the lend-lease act this year and $155,000,000 worth is to be contracted for in the first two months of 1942.

Hearing Echoes

Recent additional hearings of the Senate committee investigating the East Coast situation has repercussions during the week when Representative Joseph J. Mansfield (D., Texas) made public letters he had written to Coordinator Ickes and J. J. Pelley, president of the Association of American Railroads.

In his letter to the coordinator, Mansfield suggested construction of a pipe line from Port St. Joe to Jacksonville, Florida, submitting estimates prepared by the Southeastern Pipe Line Company that the 235-mile line could be conconstructed in from 30 to 90 days with 50,000 tons of steel at a cost of about $12,000,000, providing a connection with the intercoastal waterways over which an additional 200,000 barrels of oil could be moved from the Gulf Coast to the Atlantic seaboard daily.

Writing to Pelley, the Congressman suggested the hauling of oil by rail across Florida by construction of additional facilities costing about $2,700,000 to receive oil at Port St. Joe from barges. The 300-mile Florida haul, he pointed out, would require a much smaller number of tank cars than the rail route direct to the Atlantic Coast from the producing areas.

Charges that independent refiners were unable to purchase Texas oil were incorporated in the committee's record by Senator W. Lee O'Daniel (D., Texas), in a telegram from Richard B. Kahle, president of the Eastern States Petroleum Company.

Kahle, replying to Ickes' assertion during the hearings that the major companies probably would not buy Eastern States' gasoline because it was made from Mexican oil, declared that there was no way of knowing whether the oil was from expropriated properties but that the company was unable to sell even to majors who had never owned Mexican wells.

He charged the companies with inconsistency in refusing to purchase Mexican oil while at the same time buying Venezuelan crude produced by labor "under wage rates which would not be tolerated in Texas," and declared that Standard Oil Company of California now is selling oil to Mexico and, through subsidiaries, is buying Mexican asphalt.

Eastern States, Kahle said, has a standing offer to buy 5000 barrels a day of East Texas crude from any supplier at the posted price plus the scheduled tariff pipe line rate, and has been unable to get any.

The Texas-New York pipe line also come up for renewed consideration before the Supply Priorities and Allocations Board during the week, but took no action other than to instruct Director Donald M. Nelson to make a report on the total picture of the oil industry's over-all requirements for materials.

Nelson previously had been directed to ascertain if the pumps, valves, fittings and other materials essential to a pipe line built of seamless steel tubing were available, after SPAB had rejected the original appeal for priorities on steel plate.

It was explained that no formal proposal for seamless tube was before the board, but that if the other necessary materials are found to be available, some program may be worked out for construction of the line. However, it is admitted, that if built of seamless tube the line could not be completed before the spring of 1943, by which time it is possible that enough new tankers will have been delivered and other facilities developed to care for the East Coast situation.

Also of interest was an article by Ickes (who will write an article on the slightest provocation — sometimes on no provocation at all) in the current issue of Collier's.

Shouting his battlecry of "shortage," the coordinator told Collier's

readers that the only corrective for the situation is the Texas-New York pipe line, which he declared is not a "big company" plot but a logical solution to the problem of supplying the east.

The only real opposition to the line, he asserted, has come from the Association of American Railroads, whose president promised to move all the oil offered but who, he said, has furnished lots of statistics but few cars.

The proposed pipe line, Ickes said, has "tremendous advantages," among them:

"First, it would avoid the hazards we should face, in the event of attack, in moving tankers in convoys over 2000 miles of open sea between the Gulf and the North Atlantic.

"Second, it would avoid the loss of both steel and oil that would occur from further sinking of tankers.

"Third, it would avoid burdening other transportation facilities already being taxed at ever-increasing degrees. It is not empty half the time returning for another load.

"The most striking comparison of all: The increased transportation rates which oil companies would have to pay to move 200,000 barrels of oil daily from Texas by tank car would just about pay for the pipe line in one year."

"When I became petroleum coordinator, I knew that my actions would be misrepresented by those who had their reasons for so doing," Iskes said. "I knew that I would be criticized, condemned, ridiculed. And I was right. However, in view of all the circumstances, I have no choice except to conduct my office in conformity with what I believe to be the facts. There is a job to be done. I intend to do it."

Tankers

Criticisms that the British had obtained more tankers than was absolutely necessary and were operating them inefficiently and over routes not contemplated when the transfers were made, appeared to be proven, at least in part, October 7 when Coordinator Ickes announced that from 10 to 15 of the ships might be returned in the near future.

Even more tankers may be returned later, Ickes said, but warned that should conditions in the Atlantic change for the worse, the vessels might again be taken away from American service.

In the same announcement, however, the coordinator indicated that not all of the returned vessels might be restored to the Gulf-Atlantic service, explaining that defense needs for alcohol may require the use of some tankers for the transport of the molasses from which it is made and that the needs of other areas in the Western Hemisphere may be met by the assignment to such service of some of the ships rather than take additional vessels from the East Coast.

There was no admission in Ickes' announcement that the return of the ships was in any wise due to the pressure of criticism of British inefficiency or charges that the diverted tankers were being used for purposes other than that which was the excuse for their transfer—the "shuttle" service designed to reduce the ocean haul of British bottoms.

"The British government believes that it can within a short period release, at least temporarily, a limited number of tanker ships now assigned to the shuttle service," the coordinator's office announced.

"The release of the tankers is considered possible by the British in view of the greatly diminished sinkings and the other benefits of the policies undertaken by the United States, including the naval policy recently announced by the President; also, the realization of operating efficiencies brought about by joint efforts. It expresses a new and more optimistic appraisal of the position by the British, who only a month ago had asked for additional tankers."

The number of ships to be released will depend "upon certain supply conditions which remain to be definitely determined," it was said, but the expectation was voiced that it would range from 10 to 15, but with the stipulation that the ships would be subject to reassignment to British service if need should arise.

Ickes refused to speculate as to the return of further ships, declaring that "no human agency can predict with any degree of assurance such things as the extent of ship destruction by enemy forces, the future course of the war, or trans-Atlantic shipping conditions over the months ahead.

"While we strive toward improved performance and hope for favorable developments in those matters over which we have no control, it would be a bold prophet indeed who would attempt to say what lies even 30 days ahead," he said.

The ships to be returned will be taken from the shuttle service carrying oil from the Gulf Coast to points north of Cape Hatteras, where it is transferred to British tankers for the final leg of the voyage to England and other points. No mention was made of the ships in the Curacao-African service, two of which have been torpedoed, and regarding the use of which there has been much criticism.

Ickes disclosed that the assignment of the released tankers to United States service will depend upon the need of other Western Hemisphere areas and of the defense effort. He explained that the Army and Navy Munitions Board has advised that additional tankers will be required to haul molasses, but did not say how many were needed.

He indicated, however, that few, if any, of the vessels would be returned to the Gulf-Atlantic service.

The British move to return the tankers followed by only a few days the release of bitter criticism of the diversions by James A. Moffett, chairman of the board of California-Texas Oil Company, who charged the British with inefficient operation, including excessively long routes, which, he said, was the basis for recent appeals for more ships.

Moffett demanded that at least six of the tankers be returned immediately, asserting that this could be done if the British improved their methods of operation. He was not alone in his criticism, and the charges he made have been voiced in Congress and elsewhere over a period of many weeks.

Coincidentally with Ickes' announcement that some of the ships would be recovered, it became known that the Maritime Commission had ruled out the plans of 11 oil companies to finance shipyards for the construction of 36 tankers to relieve the situation on the Eastern seaboard.

The companies have been advised by the commission, with which a number of conferences had been held, that it was not believed there would be sufficient steel, machinery or skilled labor available for the project and that, if it was undertaken in the face of those conditions, it might be at the ex-

pense of the program already laid down for the construction of something like 136 tankers.

Sinking

The sinking of the American-owned tanker I. C. White on September 27 may play a part in the repeal or revision of the Neutrality Act and has served to focus attention again on the diversion of tankers from the Gulf-Atlantic trade to the British "shuttle service."

The vessel, owned by Standard Oil Company of New Jersey through the Panama Transport Company, was one of the vessels transferred to the British service and, because of the Neutrality Act restrictions on the movement of American vessels, was under Panamanian registry. It was the second Panama Transport Company vessel to be torpedoed, the tanker Charles Pratt having been sunk off Freetown, West Africa, on December 21, 1940.

The I. C. White started on her last voyage from Newport News, Virginia, where she had put in for repairs after a voyage from Cartagena, Colombia, to Halifax, and was sunk while on her way from Curacao, where she presumably took on a cargo of oil, to Cape Town, South Africa.

Wrong Route

Use of the boat by the British for the 7000-mile voyage across the South Atlantic when, he pointed out, normal and regular supplies for South Africa are obtained at Abadan in Iran or Bahrein, only 5000 miles distant, was criticised October 6 by James A. Moffett, chairman of the board of California-Texas Oil Company, who a few days earlier had demanded that England return at least six of the diverted vessels so as to prevent a threatened shortage of oil supplies on the Pacific Coast.

"Is this one of the tankers that could have been returned to American service?" Moffett asked. "Why was it carrying oil to South Africa?

"The petroleum stocks in South Africa are already greater than they have been in years; and there are other ways of getting oil there except by the use of American tankers needed in American service. In view of the huge supply of oil in Capetown, it is disgraceful and outrageous that this tanker should have been carrying more oil there, and be sunk en route, and at the same time have the current outcry about a so-called shortage in this country."

Consumption

Gasoline deliveries to filling stations in the East Coast area dropped to a figure 13.1 percent below the base week of July 18 in the final week of September, it is shown by figures compiled by the coordinator.

Deliveries reported by the 17 large supplying companies totaled only 101,270,002 gallons for the week, against 104,504,125 gallons in the previous week, 128,619,190 gallons in the "peak" week ended August 8, and 116,592,866 gallons in the "base" week ended July 18.

The coordinator also reported that during the week ended September 27, 3135 tank cars were moved into the East Coast district from 30 different loading points.

The tank-car movement consisted of 549 cars of gasoline, 45 of kerosene, 225 of fuel oil, 38 of lubricating oil, 3 of asphalt, 10 of naphtha, 38 of residual, 4 of liquid petroleum gases and 1 of wax, it was stated.

Weekly Report

By companies, 927 cars were reported by Standard Oil Company of New Jersey, 503 by The Texas Company, 372 by The Atlantic Refining Company, 355 by Pan American Petroleum & Transport Company, 283 by Shell Oil Company, 183 by Consolidated Oil Corporation, 147 by Gulf Oil Corporation, 111 by Socony-Vacuum Oil Company, 93 by Cities Service Oil Company, 70 by Tide Water Associated Oil Company, 49 by The Pure Oil Company, 41 by Standard Oil Company of Kentucky and 1 by Sun Oil Company.

A report for the week ended October 4, however, showed a considerable increase in the use of tank cars, a total of 4099 arriving at Eastern destinations with 2437 carloads of crude and 1662 carloads of products, the latter including 1150 cars of gasoline, 106 of kerosene, 283 of fuel oil, 52 of lubricating oils, 17 of asphalt, 3 of naphtha, 47 of residuals, 2 of liquid petroleum gases and 2 of wax.

Officials of the coordinator's office explained that while some of the oil was shipped by rail direct from producing areas, in most cases it moved part of the way by pipe lines or barges, thus reducing the transportation cost from what it would be for all-rail delivery and relieving some of the burden of the railroads and their equipment.

Tank Trucks

Plans to use idle or partially-idle tank trucks in an effort to relieve the East Coast shortage have been drafted by a representative group of eastern petroleum tank-truck operators, it was learned during the week.

It was announced by American Trucking Associations that following a meeting at the Interstate Commerce Commission, Maurice L. Wilcox, vice president of Leaman Transportation Company, Downington, Pa., had been appointed a consultant to the petroleum coordinator on tank-truck transportation.

A steering committee also was elected, to work with Wilcox and Ickes in drafting plans for short-haul truck transportation on routes where railroad tank cars now are used.

Wants Truck Count

The cooperation of the truckers was sought by the coordinator's office, it was said, in an effort to develop statistical information on the number of trucks available, the extent to which they could be substituted for rail movement, and similar questions.

This information will be used in cooperation with refineries, pipeline operators and other shippers to release railroad cars from short hauls. Cooperation of the Interstate Commerce Commission will be extended through the granting of the necessary operating rights, the making of rates, etc.

Another Investigation

Possibilities of another lengthy investigation of the East Coast situation were aroused by the appointment by Chairman Schuyler O. Bland of the House Merchant Marine and Fisheries Committee of a subcommittee to inquire into the supply of oil, coal and gasoline for the Atlantic Coast.

The committee will consist of Representatives Edward J. Hart (N.J.), J. Hardin Peterson (Fla.), John A. Meyer (Md.) and Winder R. Harris (Va.), Democrats and James C. Oliver (Maine) and Joseph J. O'Brien (N.Y.), Republicans.

Decision of Chairman Bland to make an investigation of his own was reached as a result of the nu-

merous complaints to Washington regarding the oil and coal situation. Like oil, the supply of coal for the East has been curtailed by the lack of adequate transportation facilities, but unlike oil, that situation results, not from the diversion of facilities for defense purposes but from the heavily increased demand during the summer from defense industries and the depletion of stocks in the spring during the miners' strike. To meet the summer demand, 98 percent of the railroads' coal-carrying facilities were brought into use, leaving little margin for expansion of the movement to meet the winter increase.

A thorough investigation of the situation also was sought by Representative Carl Vinson (Dem., Ga.), chairman of the House Naval Affairs Committee, in a resolution introduced October 7 for the creation of an eight-man board to conduct a three-way study.

Board Proposed

The proposed board would consist of two members, each, from the Army, Navy, Coordinator's office and Office of Production Management, and would make a survey, first, of the civilian and defense needs of the East Coast area to determine if there is an actual or threatened shortage; would recommend what steps are necessary for relief, if a shortage is found to exist or impend, and whether such facilities should be provided by the government at its own expense, by subsidies to private concerns or by private concerns with their own money; and, if a pipe line is found desirable, the size, type and route.

In investigating the pipe-line situation, it is expected the board would be required to determine whether the Ickes' supported Texas-New York line or the Wichita Falls-Savannah line proposed by the Trans-American Pipe Line Corporation at hearings before the Senate investigating committee last month should be selected.

The long-distance line has been subject to attack as a potential natural gas line and no government official or oil company representative has yet announced definitely what disposition would be made of it after the emergency. The Texas-Georgia line, on the other hand, has been given some support as a feeder for the Southeastern refineries which would eliminate the long haul around the Florida peninsula and release tankers for additional service between Savannah and northern ports.

Anti-Trust

Counsel for the many companies involved are now going over the terms of a proposed consent decree settlement of the "all-industry" suit filed in the Federal District Court for the District of Columbia by the Department of Justice on September 30, 1940, it was disclosed October 8 by Attorney General Francis Biddle.

Biddle said also that negotiations have been going on for settlement of the present and proposed cases under the Elkins Act, but did not indicate what progress had been made.

The "all industry" suit named 22 major oil companies, their subsidiary and affiliated companies and the American Petroleum Institute, something like 130 defendants being involved. Beause of the great number of companies, the Attorney General said, the development of a universally satisfactory decree has been slow.

The suit sought to outlaw many of the practices followed by the integrated companies, modified to some extent by the criticisms of the National Defense Advisory Council against any action which would demoralize the industry and threaten the progress of the defense program.

The case was supplemented by suits against Phillips Petroleum Company, Great Lakes Pipe Line Company and Standard Oil Company (Indiana), charging violation of the Elkins Act. More than 50 other suits also were planned.

The new attorney general said the policy of the department with respect to anti-trust law enforcement would be the same "as before" and that, so far as he knew, Thurman Arnold would retain his post as assistant attorney general in charge of the anti-trust division. It had been rumored that the two officials did not agree on enforcement policies and that Arnold might resign.

Biddle declared that enforcement of the laws is more necessary during the defense emergency than in normal times, because so much of the defense work naturally goes to the larger corporations which are best equipped to deal with it, leading to danger of the "little man" being frozen out of industry.

Conservation

Reduction of speed on the national highways would save about 185,000,000 gallons of gasoline annually, but would deprive the federal and state governments of about $10,000,000 of the gasoline tax income, it was estimated October 9 by John M. Carmody, head of the Federal Works Agency.

More important, Carmody said, conservative driving would cut down the toll of lives lost in accidents. His appeal was aimed at a comparatively small number of motorists who drive at speeds greater than 45 miles per hour, estimated by the Public Roads Administration as 19 percent of all drivers.

Counts by the Public Roads Administration at more than 400 points indicate that traffic on state highways during the first four months of this year was about 17 percent greater than in the same period of 1940, and statistics indicate that traffic fatalities also have increased 17 percent.

Lend-Lease

A continuous flow of oil for Britain, estimated to cost $155,000,000, is planned under the new lend-lease program, funds for which were asked of the House of Representatives in the second supplemental appropriation bill October 8.

Reporting the bill to the House, the appropriations committee made public testimony taken at its hearings on the measure, revealing that Rear Admiral Ray Spear, chief of the Bureau of Supplies and Accounts of the Navy Department, had testified that the appropriation would be used to provide a continuous flow of oil products to be delivered to the United Kingdom, its dominions and colonies.

Admiral Spear gave figures covering commitments which it is expected will be entered into before February 28, next, providing 4,600,000 barrels of aviation gasoline to cost $32,300,000; 23,980,000 barrels of motor gasoline to cost $60,900,000; 9,890,000 barrels of kerosene to cost $19,000,000; 9,400,000 barrels of gas oil, diesel oil and fuel oil to cost $12,600,000, and 2,630,000 barrels of lubricating oils and asphaltic crudes to cost $16,500,000, all for the United Kingdom; 630,000 barrels of lubricating oils to cost $4,100,000; 1,060,000 barrels of motor gasoline to cost $2,700,000, and 5,150,000 barrels of gas oil, diesel oil and fuel oil to cost $6,900,000, for the dominions and colonies.

Under the current lend-lease appropriation the Navy Department received $56,275,000 up to August 31, and actual deliveries to that date

were 2,839,972.78 barrels of oil products valued at $6,165,549; since September 1 an additional allocation of $33,000,000 has been made. These funds, Admiral Spear said, will be exhausted by the end of the year.

Asked whether any difficulty was anticipated in filling the British requirements, Admiral Spear told the committee that "so far as I know, we will have no great difficulty in meeting our Navy needs and the British requirements, with one possible exception, and that is in the case of the aviation 100-octane gasoline situation."

During the hearings, the committee asked witnesses from interested agencies for figures on oil purchases abroad, including those of aviation gasoline but, the information being of military value, did not publish the data.

None for Nippon

No oil whatever is now moving to Japan from the United States, Washington learned this week.

The news that this major source of oil for the junior Axis partner had dried up came from London where, it was said, diplomatic advices disclosed that the United States had raised the bars, following the example of the British in those oil-producing areas under their control, and the Netherlands Indies.

With her supplies limited to what she can secure from areas under her control, the report said Japan is now placed in a position, economically, where she must either risk war with England, Russia and the United States or abandon her plans for the conquest of Asia.

Construction

Construction by members of the oil industry of new buildings requiring the use of scarce materials was banned for the duration of the emergency October 9 in orders adopted by SPAB prohibiting new construction projects using such materials unless they are necessary for direct national defense or essential to the health and safety of the people.

Immediate interpretation of the orders was that they would limit oil-industry construction to such plants as might be required for defense production and would preclude the building of new filling stations of anything but the simplest construction.

The board's sweeping action brought under government control every building project in the country, from bungalow to skyscraper and from roadside stand to the largest factory, and even went so far as to cover highway construction, river and harbor improvements and other projects of the government itself.

Determination whether a new project will be given approval in the future will depend upon whether it involves the use of appreciable quantities of critical materials and, if so, whether it is essential that it be carried out at this time.

Projects now under construction will be permitted to continue, if the necessary materials can be procured.

Mexican Settlement

State Department officials at the close of the week were "considering" the refusal of Standard Oil Company of New Jersey to accept the latest proposal for settlement of expropriation claims against Mexico.

The company's action was not entirely unexpected, but administration officials had been hopeful that the proposals for settlement of the three-year-old issue would be accepted so there would be no further delay in development of a general accord designed to settle all outstanding claims against Mexico, including those arising from oil and land expropriations, and providing for loans to that country of $60,000,000 by the United States.

While State Department heads refused to speculate as to their future course, there was some belief in Washington that the administration might go ahead with the negotiation of the accord, leaving recalcitrant oil companies and other claimants "out in the cold," to make such terms with the Mexican authorities as they could without the support of the United States government.

Farish Protests

Settlement of the controversy following confiscation of oil properties on the basis proposed by the Mexican government was classed as impossible by Standard Oil Company of New Jersey by W. S. Farish, president, October 10. His statement was that his company "could not give assent to the agreement now proposed."

The statement concerned only this company, whose Mexican subsidiary is Hausteca Petroleum Company. His full statement as carried by press associations was:

"As early as May 9, 1938, less than two months after Mexico had seized the properties, the companies suggested international arbitration. They later evidenced a willingness to make concessions from their rights by offering the government of Mexico a long term contract under which they would operate the properties, and at the end of the contract period, turn the properties over to Mexico.

"The Department of State supported these proposals and encouraged private negotiations. When these proved futile, the Department of State formally suggested impartial arbitration.

Mexican Plan Rejected

"The Mexican government flatly refused to arbitrate. It asserted its willingness to pay, but claimed that no payment could be made until the values of the properties had been determined and suggested the two governments proceed with negotiations to settle other pending questions.

"The companies have not joined in appraisals and discussions of compensation because to do so would lead to depriving them of their property rights in exchange for a paper promise of future payments.

"The Mexican government's announced method of evaluation is in itself confiscatory, since it eliminates subsoil rights which represent the main element of value, this in repudiation of its agreement of 1923 and 1927 with the government of the United States. . . .

"In the light of these considerations we feel that the companies can not give their assent to the agreement now proposed."

Import Quotas

More than a billion gallons of crude, topped crude and fuel oil still remain to be imported under the Venezuelan trade agreement quotas for 1941, it was disclosed recently by the Bureau of Customs. Only Mexico, of the four major participants in the movement, has so far filled its quota, the bureau reported. Reduced-tax imports from Mexico were cut off in the spring, at which time it had filled its quota of 138,587,400 gallons.

Rising Prices and Increased Costs Point to Crude Raise

An Analysis of Today's Crude Markets by the Editorial Staff, Embodying Pertinent Economic Data and Appraisals of Special Situations in All Districts of the Country.

A CRUDE-PRICE advance of 10 cents a barrel in the Mid-Continent and the Middle West appears clearly justified by general conditions and the situation within the industry; and an early adjustment of postings logically may be expected, unless the government forbids the moderate advance that is needed to bring the lagging prices of crude abreast of prices in general.

While crude-oil prices have marked time on the spot where they stood May 23, commodity prices in general have further advanced approximately 8 percent, the Department of Labor's index of 889 commodities at wholesale having risen from 85.0 percent of the 1926 average on May 24 to 91.6 on September 13, while subsequent weeks very likely have brought further gains in the general price level.

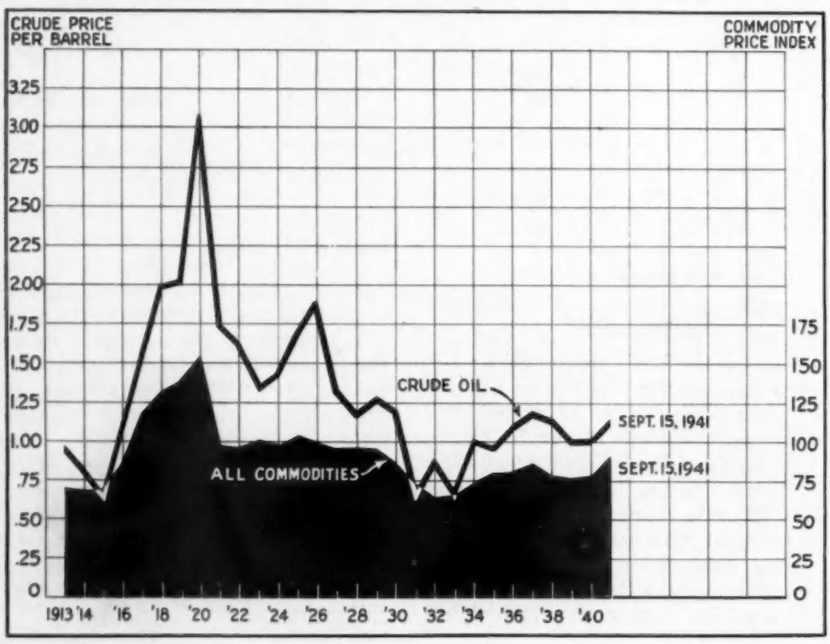
If that general 8 percent increase were applied to the $1.17 posting for 36-36.9 gravity Mid-Continent crude oil, the posting would be increased about 9 cents a barrel.

Relation of Crude Postings to *Weekly* Statistics on Prices in General

ITEM	May 24, 1941 (After Latest General Crude Raise)	Sept. 13, 1941 (Latest Weekly Figures Available)	Percent Increase in About 4 Months
Commodity Prices at Wholesale, Weekly Statistics of Department of Labor:			
Combined Index, 889 Commodities (1926=100)	85.0	91.6	+ 7.7
Farm Products	77.3	91.6	+18.5
Food	79.5	89.1	+12.1
All Other	87.7	91.6	+ 4.4
28 Basic Commodities	143.6	156.5	+ 8.9
Price of Crude Oil, per Barrel:			
Okla.-Kansas, 36-36.9 gravity	$1.17	$1.17	.....
California: Signal Hill 26 gravity	1.11	1.11	.....
Penn. Grade, Bradford-Allegany	2.55	2.75	+ 7.8

Crude Postings Normally Keep in Line with Prices of Other Commodities, Which Have Continued to Increase Sharply

Crude price is yearly average for nation. Commodity price index is that of Department of Labor, for 889 commodities at wholesale, on basis of 1926 as 100.



A 10-cent crude raise would be quite in line, therefore, with the advances scored since late May by nearly a thousand other commodities, in the aggregate.

The general rise in prices constitutes within itself strong justification for a proportional increase in crude prices and under normal conditions might be expected to precipitate a crude advance. But twice already, in California and in Pennsylvania, producers of crude oil have had to offer specially prepared data in justification of crude raises, showing that increases were based on higher costs of production; and presumably it will be necessary for Mid-Continent and Middle Western producers similarly to assemble data in support of advances in those regions before higher postings may be inaugurated.

However, the required evidence may be readily assembled, for the operating costs of oil producers obviously have increased in recent months. In the first place, wages and salaries, which represent a large part of the cost of producing oil, have been generally increased around 5 percent within the past two months, most of the major companies having given raises of 5 to 10 percent around September 1, in recognition of increased costs of living, while many of the smaller companies have provided similar increases. In the second place, costs of materials and supplies used by the industry, as well as wages and salaries, have substantially advanced, as attested by the above mentioned rise of commodity prices in general. Meanwhile, there has been a stepping up of the estimates of taxes that will have to be paid in continuing in the business of producing oil. In addition, new expenses have arisen in recent months in the production of oil, as for example the costs involved in obtaining materials and equipment under the priorities system and the expenses involved

through delays in such procurement of supplies.

Producers traditionally feel that the price of crude oil should be based on cost of production and not upon prices realized by refiners for gasoline and other derivatives, and that any disparity between the cost of crude and value of derivatives should be corrected by adjustment of the latter and not the former. Consequently, they contend at present that a crude raise is justified, and that the refiner's margin may be protected, if necessary, by small advances in product prices, although that margin already has been largely protected by continued improvement of refined-oil prices following the temporary pegging of crude prices in May.

Within a recent period of only two months, wholesale prices of petroleum products in the aggregate increased 2½ percent, the Department of Labor's index for that group having risen from 59.9 percent of the 1926 average in June to 61.4 in August.

The improvement of gasoline prices since June 1 alone makes Mid-Continent crude worth 5 cents a barrel more to the refiner, while other products also have somewhat improved in price, thereby further increasing the value of crude to the processor. On June 2, this year, 72-74 octane gasoline f.o.b. Oklahoma refineries was quoted as 5¾ to 6⅛ cents a gallon, and on October 7 the quotations were up ¼ cent to a range of 6 to 6⅜ cents. From the 42-gallon barrel of Mid-Continent crude, the refiner recovers 21 gallons of gasoline, a yield of a little over 50 percent, and receiving ¼ cent a gallon more for gasoline than in May, he realizes 5¼ cents a barrel more than formerly on merely the gasoline content of each barrel of crude processed.

Even in the absence of any aid through improvement in prices of other products, therefore, the refiner could pay 10 cents a barrel more than present postings for crude oil and still have as much margin of profit as he had at the beginning of June, if such crude raise were accompanied by the small increase of ¼ cent a gallon in refinery prices of gasoline.

Allowing for the substantial improvement since last May in prices of fuel oils, kerosene, lubricants, and other products also derived from crude, it is indicated that the almost negligible, one-point increase of ⅛ cent a gallon in the price of gasoline would protect the refiner in a 10-cent advance of crude postings.

Set forth below are concise analyses of the crude markets in the various sections of the country, as made late last week by the district editors of this publication.

Illinois

A general increase in Illinois crude prices of at least 13 cents is believed by many operators to be impending, although major purchasers are noncommittal. Such an increase would boost the posted price for Illinois Basin crude from $1.37 to $1.50.

The increased cost of producing oil in Illinois is exemplified in the circumstance that in some instances, operators are paying more for used pipe, taken out of shallow, stripper wells, than they formerly paid for new pipe.

Oklahoma-Kansas

The crude market in Oklahoma and Kansas is in better position than at any other time in recent years for justifying a crude-price advance. More purchasers and pipe-line companies are looking for connections in Oklahoma than for a long time. Same is true in Kansas, within limitations of pipe-line facilities.

Although not alarming, there is a general crude scarcity particularly in Oklahoma; and some purchasers in both Oklahoma and Kansas have been and are now offering premiums for crudes of special quality, which command competitive bidding.

Oklahoma is producing only 430,000 barrels daily, although demand is 50,000 barrels above that amount. Kansas is producing 250,000 daily, and output could not be stepped up more than 15,000 barrels without exceeding pipe-line handling facilities.

Refined products are bringing improved prices, and the margin between the cost of crude and the value of finished products has been increased sufficiently to induce the placing of some minor refineries in operation, with the result that more of the district's crude now is earmarked for such demand. The present margin for the refiner is sufficient to allow a moderate crude increase without imposition of hardship on refineries.

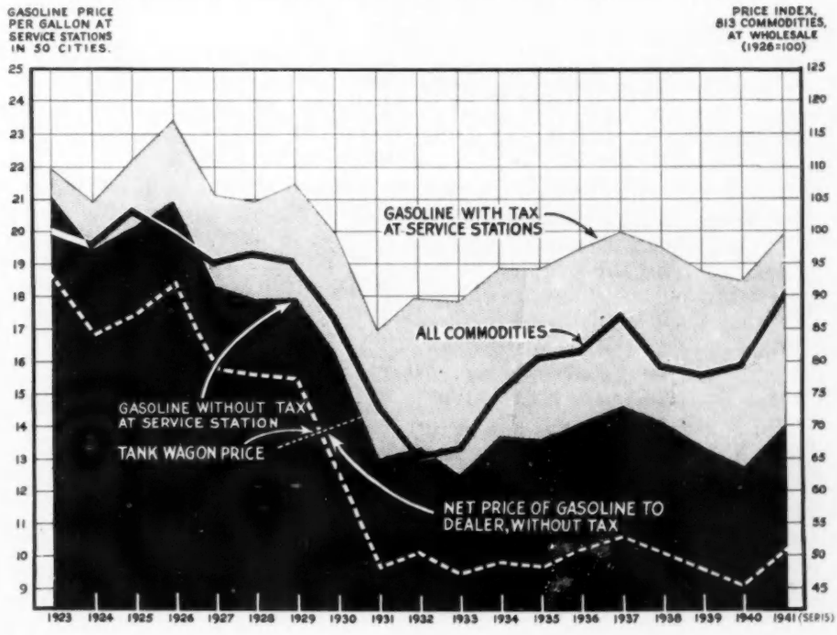
In view of recent further increases in prices of other commodities and accompanying increases in operating expenses of oil producers, an advance of 10 to 15 cents in crude postings is regarded as justified and reasonable.

East Texas

East Texas and comparable grades of crude are enjoying extremely firm market demand. Major purchasers are constantly

Prices of Gasoline Have Not Risen as Sharply as Those of Other Commodities, and Further Slight Advances in Support of Prospective Crude Raise Would Not Be Unreasonable

Chart shows relation of service station and dealer prices of gasoline to curve of Department of Labor's price index of 889 commodities at wholesale.


GASOLINE PRICE PER GALLON AT SERVICE STATIONS IN 50 CITIES.
PRICE INDEX, 813 COMMODITIES, AT WHOLESALE (1926=100)
GASOLINE WITH TAX AT SERVICE STATIONS
ALL COMMODITIES
GASOLINE WITHOUT TAX AT SERVICE STATION
TANK WAGON PRICE
NET PRICE OF GASOLINE TO DEALER, WITHOUT TAX
1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 (SEPT.)

canvassing fields to boost their runs but unable to pry loose any appreciable volumes, so have resorted to bartering, through which purchases or production in other districts are traded for East Texas supplies.

Texas Panhandle

Panhandle crude has an extremely firm market, and price postings are only 3 cents below those quoted for North Texas, although a larger differential normally prevails.

West Texas-New Mexico

Crudes of the West Texas-New Mexico district have decreased in demand in proportion to the shrinkage in tanker facilities available for Atlantic Coast shipments. Some major purchasers are storing their surplus runs from the Permian Basin in anticipation of partial relief in the near future in regard to tankers. Refiners on the Atlantic Coast curtailed their nominations for Permian Basin oil in favor of crudes affording greater gasoline yield when the tanker situation entered into the picture.

North Louisiana-Arkansas

An increase in crude prices is believed justified and advisable for accelerating wildcatting and uncovering of new reserves in North Louisiana and Arkansas, although producers are not protesting to purchasers over present postings. It is felt that unless prices are increased, to compensate for higher taxes and higher costs of material and labor, there will be a noticeable decline in the search for new reserves, especially in the deeper horizons, such as the Lower Marine and Smackover lime, which have furnished the bulk of new reserves in the district since 1935 except for the shallow Wilcox at Olla and subsequently-found fields in that trend.

Louisiana is one of two states uncovering reserves faster than fields are being depleted, it is pointed out, but the search will be materially curtailed soon unless the price of oil is advanced.

Some operators contend that the price should be hiked at least 25 cents a barrel, from $1.25 to $1.50.

The fact that there has not been much agitation in Louisiana for higher postings is explained by the circumstance that schedules for the state usually are determined by general movements initiated in Texas or Oklahoma.

Gulf Coast-South Texas

Market conditions in the Gulf Coast and South Texas are much improved over a few months ago when tankers were withdrawn from coastwise service. Storage is declining, despite continued heavy production.

While no bonuses are being paid for connections, producers are readily finding market outlets for their oil, and distillate well connections are especially sought by purchasers.

Lack of tanker transportation may hamper Mirando district, which provides a large volume of fuel oil for the North and East, but the district likely would share in a general Mid-Continent crude raise.

Michigan

With prices holding at the best levels since 1936, Michigan crude markets are more stable today than at any previous boom period in the state's history, although production has been built up to 50,000 barrels daily from 35,000 last spring. The firm situation reflects the strong market in Illinois as well as effective control of Michigan production through application of the state oil-control law.

Michigan output beyond about 55,000 barrels daily would saturate the state's markets and leave any additional production for the Toledo and other out-of-state markets. Sohio Corporation has resumed pipe line delivery of Michigan crude to Toledo, after having suspended such movement last November, following which the line was reversed for four months to bring Illinois crude into Michigan. However, a differential favoring Illinois crude at Toledo now is holding back any important delivery of Michigan crude to that point, and may constitute a price-retarding factor.

Present circumstances indicate that Michigan prices will hold at present levels, which favor Michigan independent refining, unless Mid-Continent prices go higher. Michigan prices probably would not change without more than a 10-cent out-of-state increase.

Rocky Mountains

Price raises of 5 to 10 cents a barrel are indicated for Wyoming black oils. Markets are improving for industrial fuel oils and asphalts for paving airport runways and in road building under defense. Anticipation of a stronger crude market apparently is responsible for the revival of drilling at Oregon Basin, Maverick Springs, and Circle Ridge and for intensive drilling of Wertz dome.

Wyoming-Colorado light oil postings follow Mid-Continent schedules, as crudes largely reach out for the same markets. Consequently, any change in the Mid-Continent will affect those crudes.

The advances of 10 cents a barrel last week by Producers Refining Company, The Texas Company, and Ohio Oil Company in the prices of Cut Bank and Kevin-Sunburst crudes, to $1.30 and $1.10, respectively, are expected to suffice for some time to come. The North Montana boost was granted largely to cover advancing production costs and loss in Canadian monetary exchange. Only a serious decline in Turner Valley production would increase Canada's purchases to further advance Montana light oil prices, and such a development is not anticipated.

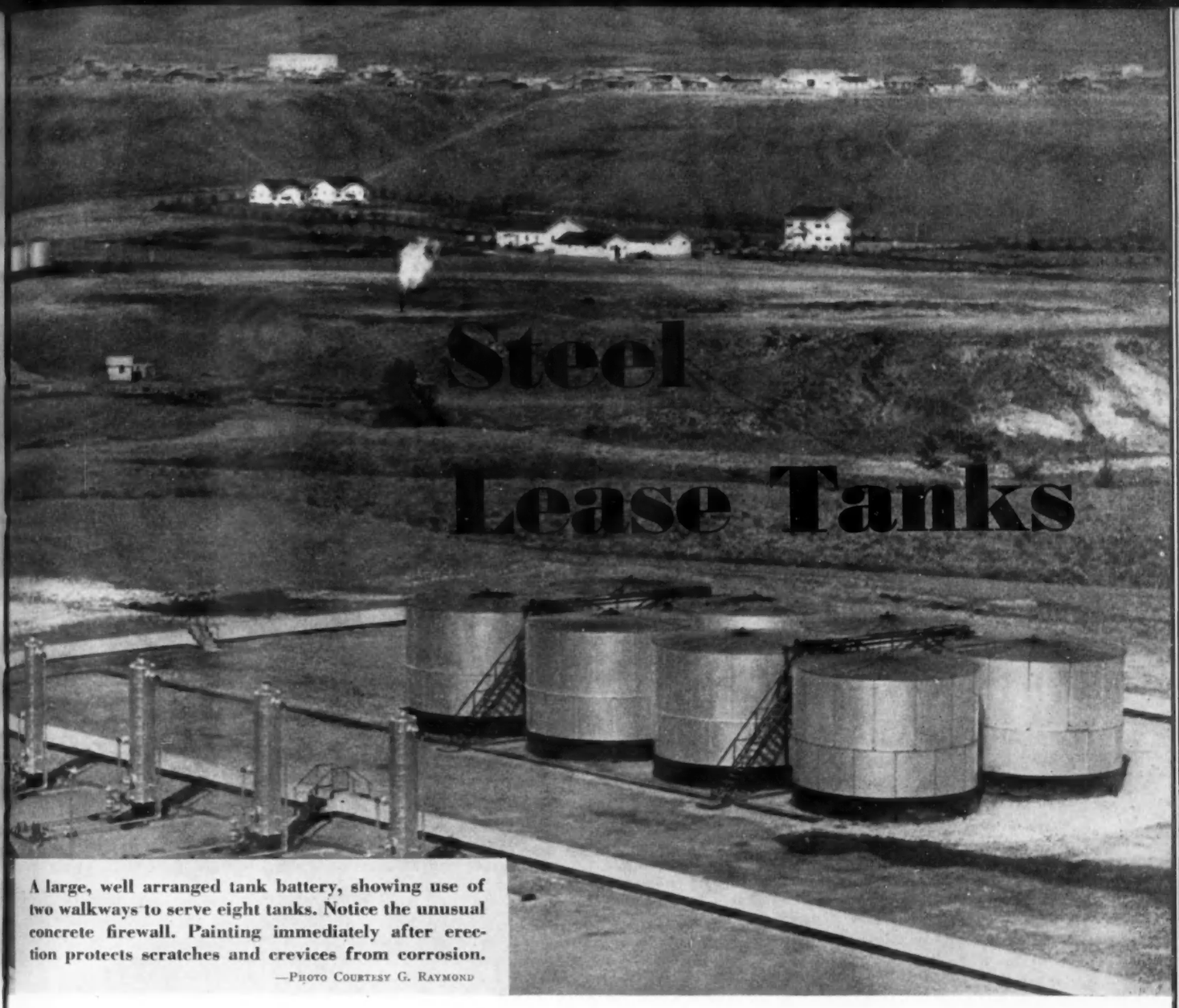
California

Although stocks of all petroleum products in the Pacific Coast territory were reduced 13,610,000 barrels in the year ended August 31, 1941, to 142,986,000, there is no other indication that any increase in crude oil price postings may be anticipated in California.

Supplies currently available are adequate on all products, and a primary problem of the industry continues to be proration of output. The decrease in stocks shown for the year has in large part represented a partial correction of a top-heavy inventory position for most products.

Discontinuance of shipments to Japan and stoppage of intercoastal shipments of fuel, as well as the disruption of Pacific maritime commerce due to the war, all have contributed to offset the prospect of a shortage of fuel and diesel oils on the West Coast which presented itself early this year. Dislocations created by these developments, together with the expectation of curtailed consumption in the Northwest due to transport shortage, all are adverse factors found in surveying the prospect of any increase in present crude-price postings.

Higher labor and material costs and higher taxes may have to come out of profits, it appears, rather than from higher prices for products, as far as the Pacific Coast oil industry is concerned.



A large, well arranged tank battery, showing use of two walkways to serve eight tanks. Notice the unusual concrete firewall. Painting immediately after erection protects scratches and crevices from corrosion.
—Photo Courtesy G. Raymond

Steel Lease Tanks

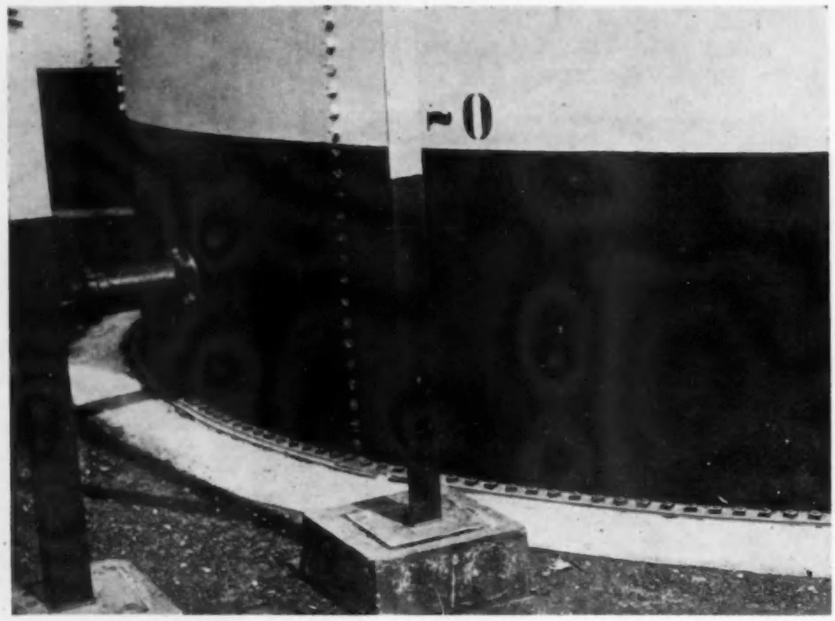
Their Selection and Installation

By GORDON B. NICHOLSON, Staff Writer

CONSPICUOUS in every oil field are the numerous tanks erected for storing the production on the lease until it can be metered and removed by the pipe line. Their very size places them always in a position of physical prominence, but construction and operative features also contribute to their eye-catching qualities. Some tanks are acclaimed for being well arranged and erected with engineering efficiency, while others stand out because of mismanagement and unwise selection. In various parts of the country, methods are used which are not found elsewhere, many showing a trend toward sound development of battery installations. The majority, however, while employing the latest improved expedients, lack other qualities that would enhance satisfactory operation.

There is considerable unanimity of opinion regarding features to be sought, but there is no indication that all those approved for one battery will be suitable elsewhere. However, tanks should be constructed and maintained to best advantage for each specific situation, with considerable thought given to assure a satisfactory installation.

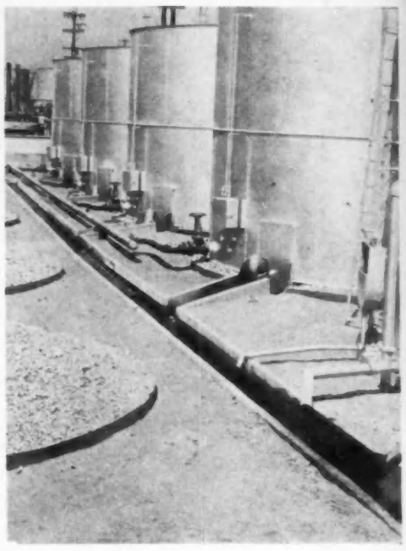
This article is limited to steel tanks, and covers, in some respects, land operations only, being roughly divided into two sections as follows: (1) Tank specifications to consider before buying; (2) suggestions for installation, operation and maintenance. In view of the defense emergency, and the steel scarcity that accompanies, it is



Tank (left) is on a concrete ring or "doughnut" with apron extending to prevent undercutting by rain water. Concrete is recognized as best foundation material.

Concrete drain (below) carries away basic sediment and salt water for cleanliness and to reduce corrosion.

Photo Courtesy G. Raymond



more important than ever to get the greatest amount of service out of tanks.

Selection Important

The choice of physical qualities desired in tanks is a problem that should be well thought out before making a decision, as many tanks are bought hastily to obtain storage for initial production, although subsequent developments prove that cost of upkeep and disadvantageous features more than counteract time saved in obtaining them. The procuring of tanks of proper size is, of course, the first consideration and is dependent chiefly on the volume of fluid expected and the time between movements to pipe lines. However, other features are equally important in their selection.

Every operator should be concerned over evaporation while crude is in storage, a decrease not only affecting the volume of stored oil but also resulting in a gravity loss that reduces its value. As gravity is a relation between the weight of oil and that of an equal volume of water, any diminution of gravity is followed by a corresponding reduction in volume. The Bureau of Mines states that for the decrease of 1 degree in gravity, there is a shrinkage of 2.5 percent in volume; or, in other words, a tank containing 1000 barrels of oil and suffering a 1-degree drop in gravity, loses 25 barrels of fluid volume. Based on daily production figures for the United States, the daily wastage at this rate would be 87,500 barrels, or, if figured at $1 per barrel, and a 2-cent reduction per barrel due to decrease of its gravity, the yearly loss would amount to $32,640,000.

Hence, the effort to reduce loss by evaporation should be uppermost in the mind of every oil operator. Nearly every battery is painted a light or aluminum color, which, by reflecting the rays of the sun, keeps as cool as possible volatile oils stored inside and lessens the vaporization which occurs. The degree to which space overlying the oil is saturated with vapor also determines the rate of evaporation. As long as the air is undersaturated, evaporation from the liquid continues, but when vapor pressure of the fluid and overlying air are equalized, no further molecular escape from the liquid occurs. Consequently, as an escape-proof tank allows fumes above the oil to remain saturated, many tanks are kept air tight under pressure to assure minimum evaporation. Numerous operators now use vapor-tight tanks, equipped with thief hatches and stack valves to hold a back pressure of 8 ounces to 1 pound. A Bureau of Mines Bulletin states that recent tests show that in tanks maintaining a pressure of 12 to 16 ounces, evaporation loss is about one-third of that which occurs in normally "tight" tanks. As opening thief hatches at frequent intervals for gauging allows built-up pressures to diminish, and the pressure loss permits considerable volume of fumes to escape, tanks of this type usually are equipped with visible gauging devices to make opening hatches unnecessary until the pipe line takes the oil. The use of equalizing lines between all storage tanks in a battery often effects considerable saving in gravity by allowing condensable vapors to be expelled into an empty tank from those being filled.

If bolted tanks are used and all valves and bolts are tightened, they must be kept in good condition to withstand pressures developed. For safety, a small outlet pipe and riser prevent pressures from building up to excess, and sometimes a breathing valve regulates the maximum amount. This valve permits all gas above a certain pressure to escape and also permits air to enter the tank in case of a vacuum. As condensation of vapors sometimes leaves valve seats gummy, they must be checked frequently to assure their proper working condition. In the summer, an inefficient vapor control system often results in a volume loss as high as 5 percent.

The amount of surface area exposed is another factor that determines the amount of oil lost by

HOW DOES YOUR COMPLETION EQUIPMENT "Rate" ON THESE 5 IMPORTANT POINTS?

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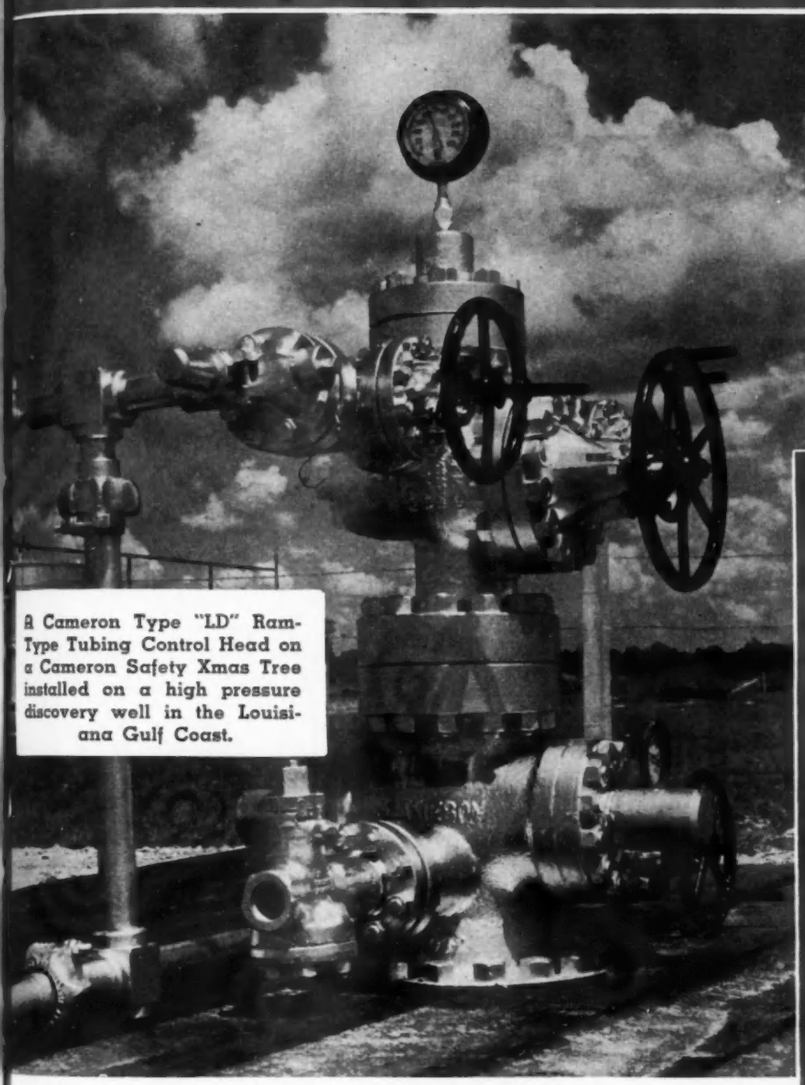
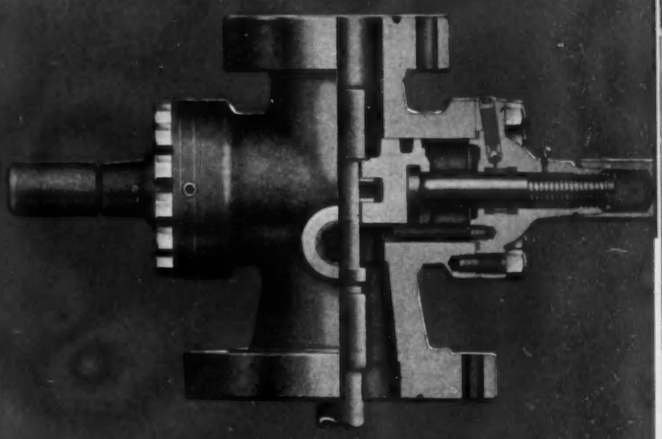
Yes		Does it give you the choice of four proven methods of suspending and sealing the tubing string?
Yes		Does it obviate the need of a cement retainer when making a squeeze job?
Yes		Does it facilitate reworking the well subsequent to original completion without killing?
Yes		Does the manufacturer provide the services of an experienced operator to instruct your production department in the proper installation of the equipment?*

* This Cameron service available in all domestic fields where a factory representative is maintained.



A Cameron Type "LD" Ram-Type Tubing Control Head on a Cameron Safety Xmas Tree installed on a high pressure discovery well in the Louisiana Gulf Coast.

CAMERON TYPE "LD" RAM-TYPE TUBING CONTROL HEAD



The accompanying cross-section view of a Cameron Type "LD" Ram-Type Tubing Control Head clearly illustrates the mechanical features which make it an unparalleled achievement in the field of completion control equipment. Its rams, like those of the regular Cameron Blowout Preventers, are equipped with patented *Cameron Self-Feeding Ram Packing Elements* which assure a positive, pressure-tight seal and permit sustained pipe movement under pressure. From the moment the tubing string is started in the hole, the rams provide quick, dependable protection against loss of control. In most instances, no additional control equipment is required during drilling-in operations. Safely repackable plastic packing seals are provided around each ram thrust screw. In order that the unit may be operated with ease against the highest well pressures, a by-pass port is provided on the lower side of the rams which allows the pressures on the front and back faces of the rams to equalize.

The Cameron Type "LD" Ram-Type Tubing Control Head is a vital link in the Cameron Closed Pressure Method of Drilling and Completion. A comprehensive booklet has been prepared on this subject and will be gladly sent to interested operators on request.

The above cross-section view of a Cameron Type "LD" Ram-Type Tubing Control Head illustrates the hanger nipple type of suspension and seal.

Three additional types of tubing suspension and seal are available: (1) Slip suspension from the top flange of the control head; (2) a boll-weevil hanger assembly which fits the top of the control head; and (3) a threaded hanger flange which bolts down on top of the control head. With each of these three additional types of tubing suspension, the rams of the control head are utilized as a master gate below the outlets to seal the annular space between the tubing and oil string.

CAMERON IRON WORKS, INC.

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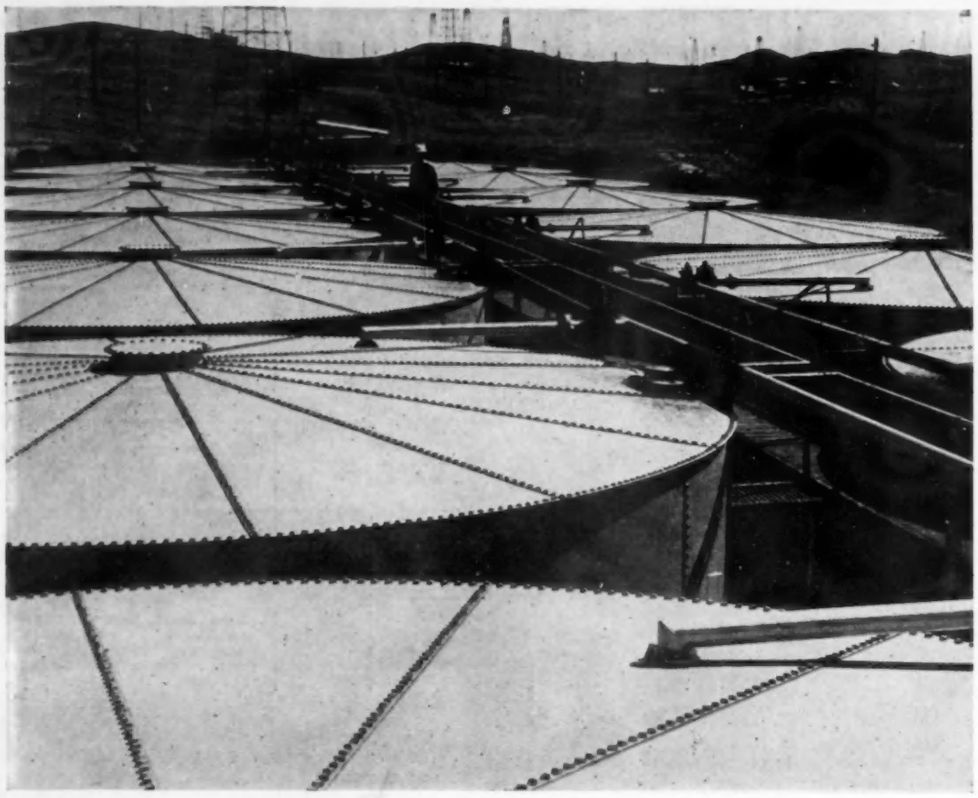


Ventilation domes are free of piping to allow easy removal for cleaning, and valves are placed near walkway for convenience.

Photo Courtesy G. Raymond

evaporation. A high 500-barrel tank, for instance, has 51 percent less exposed oil surface than a low 500-barrel tank, and offers a corresponding decrease in evaporation loss.

While considering the best tank to reduce evaporation, it is well to give thought to corrosion, that aggressive nuisance which has caused untold expense to storage facilities. Every operator, especially those in sour-oil or sulphur districts, should maintain a constant watch for signs of corrosion. Tanks should be emptied and checked frequently and quick repairs made to leaking seams or bolts. Corrosion frequently takes place at the bottom of the tank, simply because that area is the hardest to examine, and the deterioration gets a start before being discovered. Specially prepared paints for the inside of tanks has effectively reduced corrosion in many instances, the principal objection being that it often is difficult to cover the entire surface, decay later appearing in places skipped.

In haste to obtain tanks for storing the clean oil from a new well, it is easy to forget that in a year or two oil now produced may pick up quite a bit of salt-water content. In anticipation of future salt-water production, many operators now buy galvanized steel tanks to insure longer use against corrosion, while others get tanks with extra-thick walls. A further retarding of oxidation is obtained by storing oil under pressure, allowing space above the fluid to be filled largely with gas, with oxygen wholly or partially excluded. Corrosion seldom occurs without the presence of oxygen, as evidenced by performance of wells in worst sulphur areas. Tubing and separators in such wells rarely show advanced corrosion, it usually being in the stock tanks, where the first air is breathed, that first signs of oxidation appear. Equalizing lines connecting tanks assist in keeping air from entering the gas space, eliminating excessive corrosion from that source by utilizing confined vapors from empty tanks for breathing.

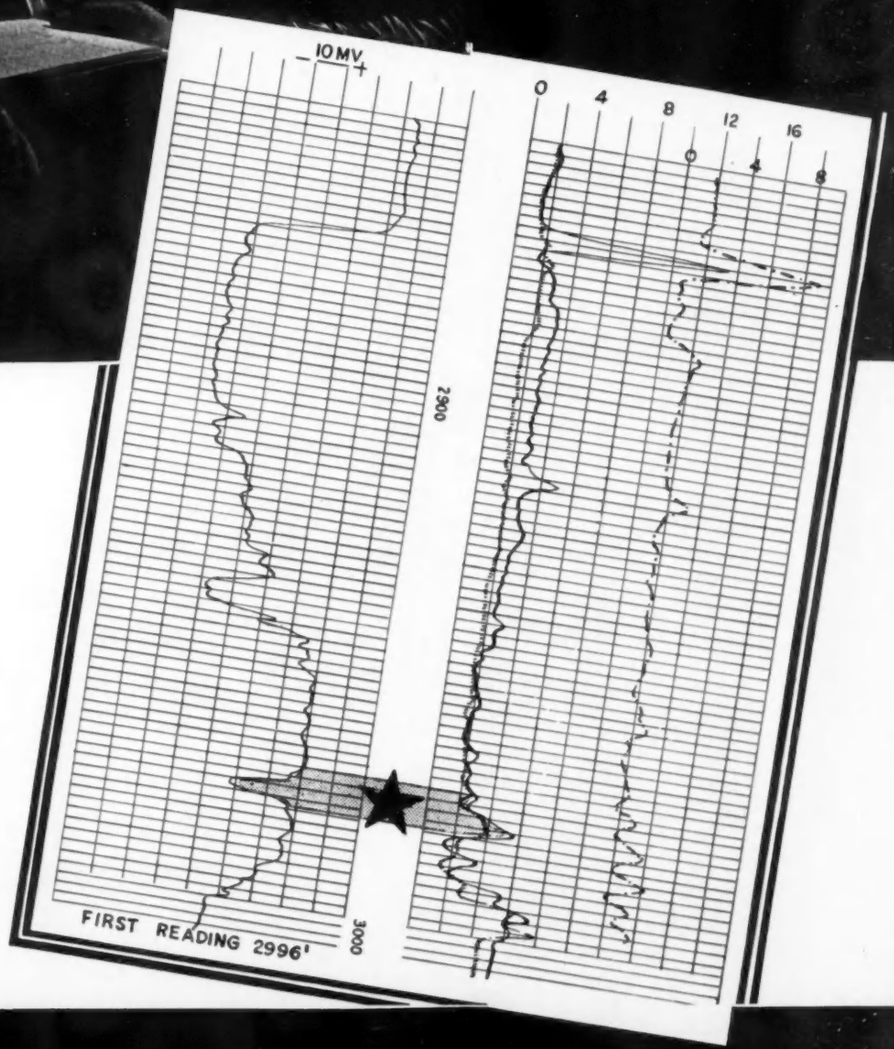
As it is usually at the time of turning oil over to pipe lines that the greatest amount of oxygen enters tanks, it is becoming a common practice to construct a vapor-tight system where no breathing of air is possible. If a free gas supply is available, a line is run from the separator or receiving tank to furnish input gas for the tanks, with pressures kept at the required amount by use of reducing regulators. As one tank is emptied or when breathing occurs, gas is drawn from the supply for replacement; when it is being filled, vapor is permitted to escape to the atmosphere through back pressure relief valves. If necessary to open hatches, escaping gas prevents air from entering the tanks.

A consideration not to be overlooked in the selection of tanks is the provision for their cleaning. In the past, cleanout openings were not of sufficient size to permit a man to get readily inside; however, modern tanks are made with larger openings to facilitate the operation. The opening should extend to the bottom of the tank to make its complete cleaning possible.

Another improved feature of modern tank construction is the safeguard taken for ventilation during cleanout procedure. In the past, it was not uncommon for men cleaning the tanks to be overcome by lethal fumes collected in the bottom because of improper circulation of air, with fatalities often resulting. Today, spacious ventilation domes for air and light constitute a safety and efficiency provision that should be sought by every operator while selecting his tanks. It is always a good safeguard to refrain from connecting pipes to the dome, as workers have to go to considerable trouble to remove them before cleaning tanks. In such cases, they will

Rocky Mountain: Mountain Sales and

How SCHLUMBERGER TOOK ANOTHER WELL OUT OF THE DRY HOLE CLASS



When C. Andrade III's No. C-2 Trevino, Colorado field, Jim Hogg County (Texas), missed the core on the pay sand, recovering only a small quantity of tight sand with odor, the operator was ready to abandon the well. However, a Schlumberger Electrical Log indicated sand with a possible show at 2973-76' and Schlumberger Side Wall Samples recovered sand with a good oil odor. On the strength of these findings, casing was set and perforated by Schlumberger at 2970-78' with 15 shots and the well tested 100 barrels daily.

SCHLUMBERGER WELL SURVEYING CORPORATION · HOUSTON, TEXAS

often take a chance on getting sufficient aeration with the dome closed, and its purpose is lost.

An improvement which has been considered for tanks is a flat steel plate welded to the floor directly beneath the thief hatch for a gauging plate to simplify obtaining accuracy by assuring a level surface on which to rest the gauge-line plumb bob. The plate usually extends higher than the floor level, but the gauge is not affected as tanks are never emptied completely to the bottom during pipe line runs. An additional advantage is offered by the plate in protecting the bottom of tanks from the point of the plumb bob, which in many cases has weakened tanks in the area below the hatch opening and allowed the floor to be eaten out. Further accuracy in tank gauging is obtained by erecting a vertical interior-pipe, bolted firmly in place, with the top inside the thief hatch, and its lower end, open and perforated, extending to a point below the fluid level. The liquid surface inside the pipe is free of surface agitation, lacking the foam that is ordinarily present. The gauge line is run inside the pipe, and fluid marks on the line give a true indication of the amount in storage. Core must be taken to be sure inside pipes give correct reading of oil and water contents. Below the hatch openings in modern tanks, steel shelves are placed for the gauger's convenience.

Proper Installation

Having selected tanks suitable for his lease, next objective of the operator is to ascertain their proper installation. Probably the first move is the selection of a location, a step whose importance often is overlooked in haste to find storage for production from a new well. No farsighted producer chooses a location without first considering its drainage. Tanks should be situated on high ground whenever possible, to make certain that water does not accumulate underneath with the consequent devastation from rust and corrosion. Another benefit of elevated tanks is the ease in turning oil over to pipe lines, as they may be emptied by gravitation. Level sites also are an asset, simplifying selection of suitable foundations.

The important point to heed in choosing a foundation or grade is the likelihood of its allowing tanks to settle. A tank which sags unevenly complicates accurate gauging, and in most cases necessitates making liberal allowances to the pipe line. Settling of soil under tanks often results in soft spots which leave their bottoms without adequate support, placing an undue load on flooring seams that sometimes causes them to break.

Concrete is recognized as the best foundation material, although not frequently used. However, if the tanks are expected to serve one lease over a long period, the additional expenditure will reap dividends in the future. Under ordinary conditions, an earthen base is sufficient for support, as the load of a 16-foot tank filled with oil seldom exceeds a half ton per square foot and usual soil carries from 2 to 5 tons per square foot without difficulty. In swampy territory, it is sometimes wise to construct foundations with a wide concrete apron extending from under the tanks to distribute the load over a broader area and to add to the load-supporting capacity of the soil.

Regardless of foundation material used, special care must be exercised in leveling ground on the site selected. Many unsatisfactory installations have resulted by setting tanks on a section with land partly cut away and partly built up to make level, as the built-up section invariably sinks, causing unevenness. Best results are obtained when tanks are placed on a site either entirely built up or

Stairways extending over firewall simplifies gauging in wet weather, and in some cases, eliminates need for stiles over the dikes. Where stairway does not extend over firewall a bridge will accomplish same purpose.

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(ONE OF A SERIES)

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Care should be taken when stabbing your joints to protect the shoulder and threads from any undue damage. Failure to seal is due to some damage to the shoulder which prevents it from forming a fluid seal, or to insufficient tightness. Joints should be tonged up tightly. Under no circumstances should the torque, applied to the string in drilling, be depended upon to tighten the joints, or to keep them tight.

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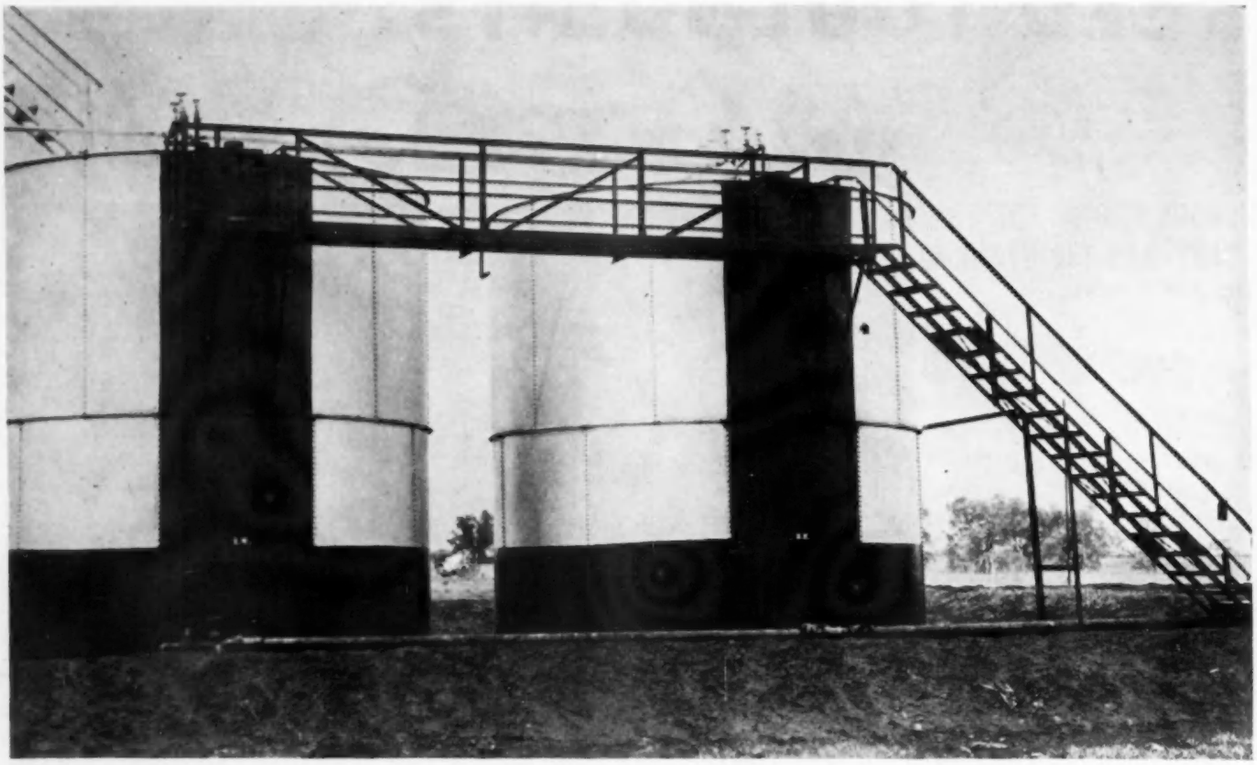


Broad black stripes painted vertically from the hatch opening conceal oil smears caused by gauging.

completely cut away to allow symmetrical settling.

Some operators build dirt mounds to support tanks, a grade that is often unsatisfactory, as frequently, regardless of packing and tamping that is employed, at some future time the tanks settle. A simple base of gravel or fine oil-soaked sand is sometimes used if the ground is firm. Other satisfactory bases are made of timbers or planks of good hard wood, creosoted to prevent rotting. Unless tanks are raised, their grades should be covered with layers of tar or oil paper for protecting bottoms. In many cases, tanks are elevated to allow painting their under sides, a big factor in the prevention of corrosion.

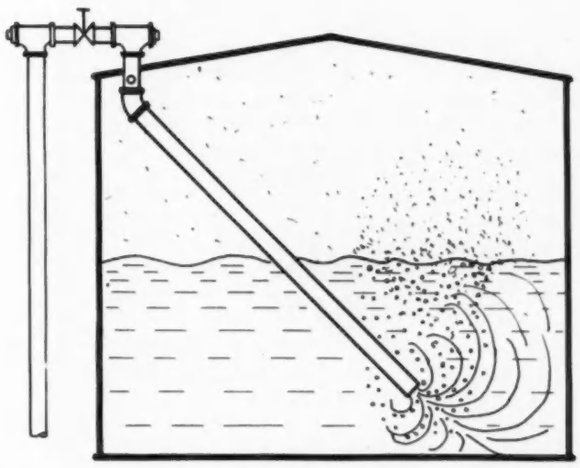
Frequently producers construct grades smaller in diameter than tanks, allowing their edges to be without support and throwing an additional strain on flat steel bottoms not designed to support loads. A better practice is to make foundations larger to give better weight distribution. Drainage ditches should be dug approximately six inches from tanks around their circumference to care for rain water and retard undercutting of foundations.

Bottom drains for emptying tanks cause trouble in many fields. After elaborate precautions are taken to assure a firm foundation, it is common practice to dig a cave under tanks to make connection with the drain. Even after the cave is filled in and carefully tamped, the soil sinks and leaves a large portion without substantial support. Inevitably tanks settle over the caved area, and often sagging bottoms give away under the load of fluid carried. Several operators now use a side drain to avoid the undesirable condition, and find that basic sediment empties from this drain as completely as from the bottom type, at the same time being more convenient to manipulate.

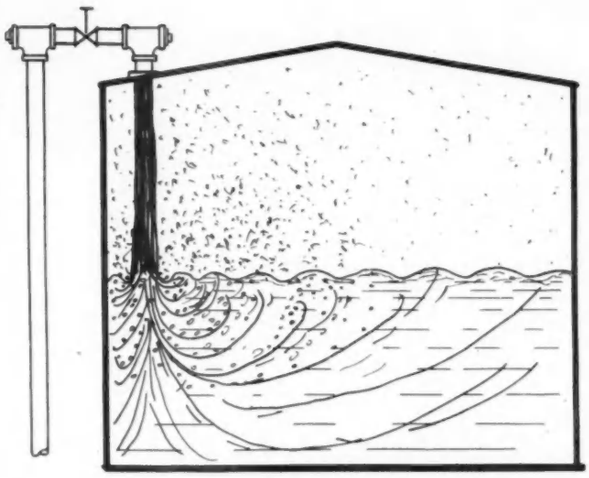
Many modern batteries are installed with precautionary measures to permit sinking of one tank without affecting others in the battery by equipping oil inlet pipes with flexible joints or swings between tanks to give freedom for lateral and vertical movement of each tank independently of others in the battery. The flexibility relieves lines and adjacent tanks of supporting the tank that settles.

A great amount of evaporation loss occurs as the oil enters stock tanks. The usual method of filling tanks allows fluid to drop the distance from inlet to bottom with violent agitation and a great amount of evaporation. Operators are aware of the large volume lost, and many are taking steps to prevent its occurrence. Several methods may be used to reduce the waste, among them being use of an elbow to deflect flow against the wall of the tank as it enters, allowing the oil to spread out in a thin film as it slides downward, entering the stored fluid with a minimum of turbulence. Such use of an elbow is probably the least expensive device, and tests show decreased vapor waste. Several operators use a bottom inlet which in many instances reduces agitation and increases gravity of oil. Often, free gas from the separator enters tanks by the bottom inlet, disturbing the main fluid body and permitting soluble gases to escape, rendering this method unprofitable. Many oil companies employ successfully a sloping pipe extending to bottom, with holes drilled in it immediately below the tank deck to break the syphon. One producer claims to increase by 1 degree the gravity of oil in tanks by using an open sloping trough. Oil is delivered to the tank deck and turned into the trough, sliding down it in a thin film into the tank, with ex-

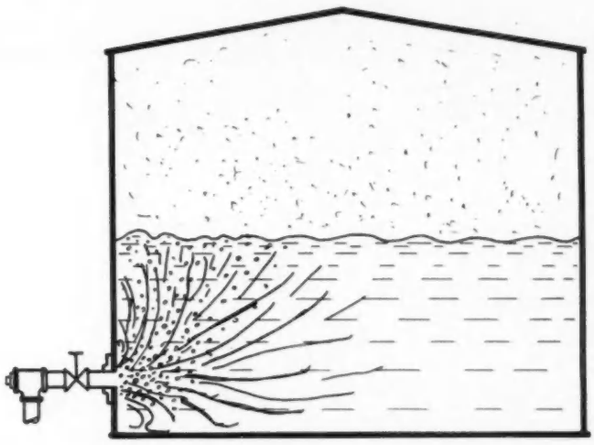
Effect of Different Installations of Inlet Pipes on Lease Storage Tanks



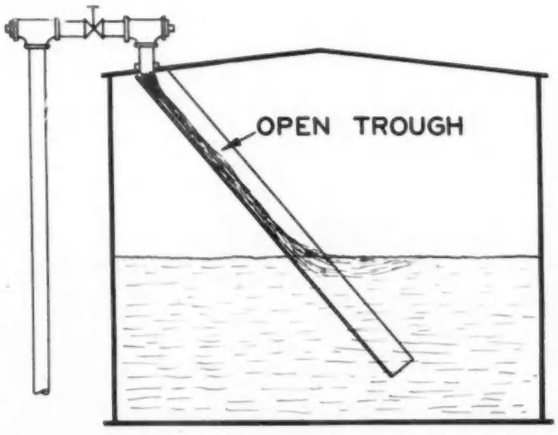
Sloping pipe with hole in top to relieve syphon is approved as reducing turbulence in tank while filling.



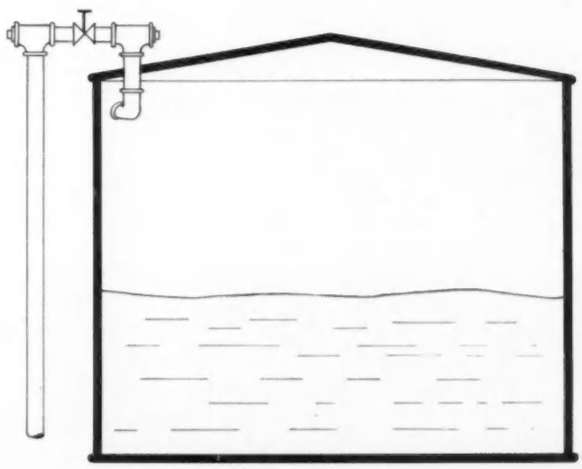
Inlet at top of tank allows fluid to drop with considerable agitation causing large volume and gravity losses by evaporation.



Bottom inlet sometimes lessens agitation, but frequently free gas in the fluid increases the disturbance in tanks.



Open trough oil inlet allows excessive gas to escape and oil to enter tank with minimum disturbance.



Deflector elbow directs flow at an angle against inner wall of tank, causing it to spread out and spiral downward to enter main fluid body with little agitation.

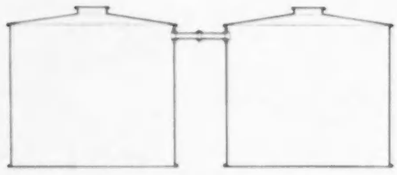
cessive gas escaping into the air.

A good rule to follow is to keep as much piping as possible off tank decks and arranged so its load will not be supported by them. This not only adds to the life of decks, but also lessens danger of their collapsing to endanger lives of workers on tanks, as there is no way to know when they are too corroded to support the weight of men and equipment. One type battery that obeys this rule runs pipe on the ground with separate risers to each tank. The method is a little more expensive in piping required, but keeps the load off tank decks and places all valves conveniently along walkways.

Tanks frequently overflowed lose their original brightness, and, as a safeguard, many batteries are equipped with provisions for its prevention. A simple form of overflow control consists of a line connecting two or more tanks just below their decks, automatically delivering excess oil into the next tank. Such lines are equipped with lockable stops between tanks to satisfy pipe lines. There are also automatic switching valves placed on flow lines and triggered so that when one tank is filled to the brim, flow is shut off from it and diverted into the one adjacent.

Oil men are paying more attention to appearance of their leases, with the unsightly shambles that formerly graced the majority of oil fields seldom being seen. Men in the field take pride in their leases and take steps to assure their cleanliness. To enhance neatness, many tanks are painted with broad black stripes extending vertically from thief hatch to ground level and making less obvious oil splashed down the sides while gauging. The area surrounding hatches is painted black in some cases to conceal smears caused by dripping oil.

Notable among "good housekeeping" tendencies which are developing is the increasing use of grasshopper cleanouts for draining



Diagrammatic sketch showing simple overflow line between tanks, to prevent waste and help "good housekeeping."

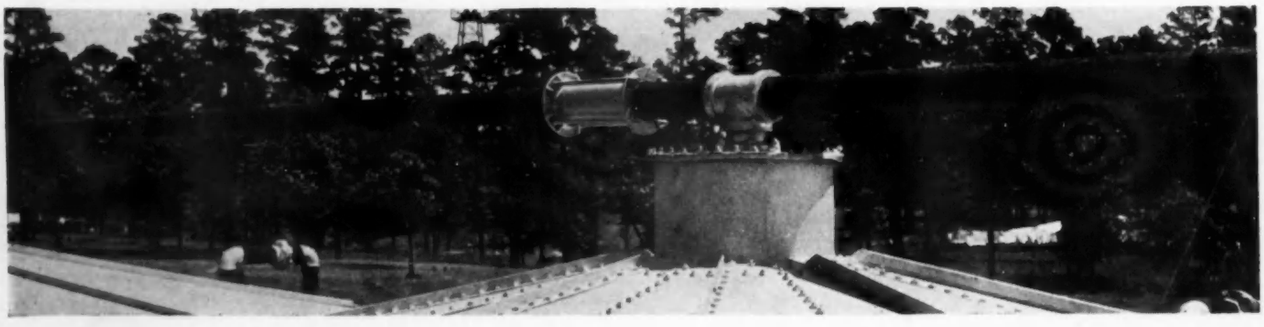
off water in the bottom of the tank. These "V" shaped legs also are an aid against accumulation of basic sediment, and as a further advancement to rid leases of the substance, drains of concrete or steel frequently are used to carry it away. Such troughs must have sufficient slope to insure steady movement of the sluggish matter and must be large enough to accommodate the volume expected. Drains usually are covered with steel plates of correct dimensions, and direct fluid to the burning pit, located far enough from the battery to safeguard against fire. Drains also carry salt water from tanks, this highly corrosive fluid not only damaging the steel, but also deteriorating dirt foundations. Troughs for its drainage should permit rapid release from the area around the tank grade, and its subsequent disposal should not allow wind to spray grades and tank exteriors. With proper care given to salt-water disposal, many tank failures can be prevented.

Neatness in firewalls adds to the appearance of tank batteries, with uniformity in height, width, and slope of the dike being important factors. Oiling prevents intrusion of grass and weeds and is repeated as frequently as needed. Special attention should be given to drainage of the area inside firewalls. The site must be sloping and in the lowest side or corner is usually placed an underground pipe to allow water to escape under the walls. As dikes usually are regarded as permanent construction on leases, they should be built to enclose sufficient area to care for future expansion. Additional tanks are frequently erected as production increases when new wells are completed; and space inside firewalls for gunbarrels and heaters should be provided in the original plans. Otherwise, after tanks are in operation for a time, it becomes necessary to remove one end of the dike for enlargement, an expensive procedure that is easily avoided.

Stairways to the top of batteries usually are located entirely inside firewall enclosures. To simplify ascending the steps for gauging, some operators extend steps over firewalls, eliminating the necessity of climbing over the stile. This feature is always a convenience, but is of particular use in wet weather or floods by circumventing walking in the muddy area inside the dike.

Painting tanks is beneficial not only for good housekeeping but also to assure resistance to rust and corrosion. The first painting should occur immediately after the tanks are set up, this initial coating being to cover small scratches and crevices put on the surfaces during shipping and erection, such blemishes offering a fertile field for corrosive elements. Paint should be applied at frequent intervals while tanks are in use.

It is impossible for a single tank battery to incorporate each of the ideas described, nor is every suggestion practical for use in all fields, as everywhere different conditions exist that prohibit use of standardized methods. In the grasp of every operator, however, is the opportunity to obtain a battery most suited to his particular needs, and the privilege of maintaining it in a manner that will prevent its becoming an eyesore and source of costly annoyance to himself and his organization.



Flexible joint allows tank to settle without placing strain on other tanks. Piping should preferably not be connected to ventilation dome.

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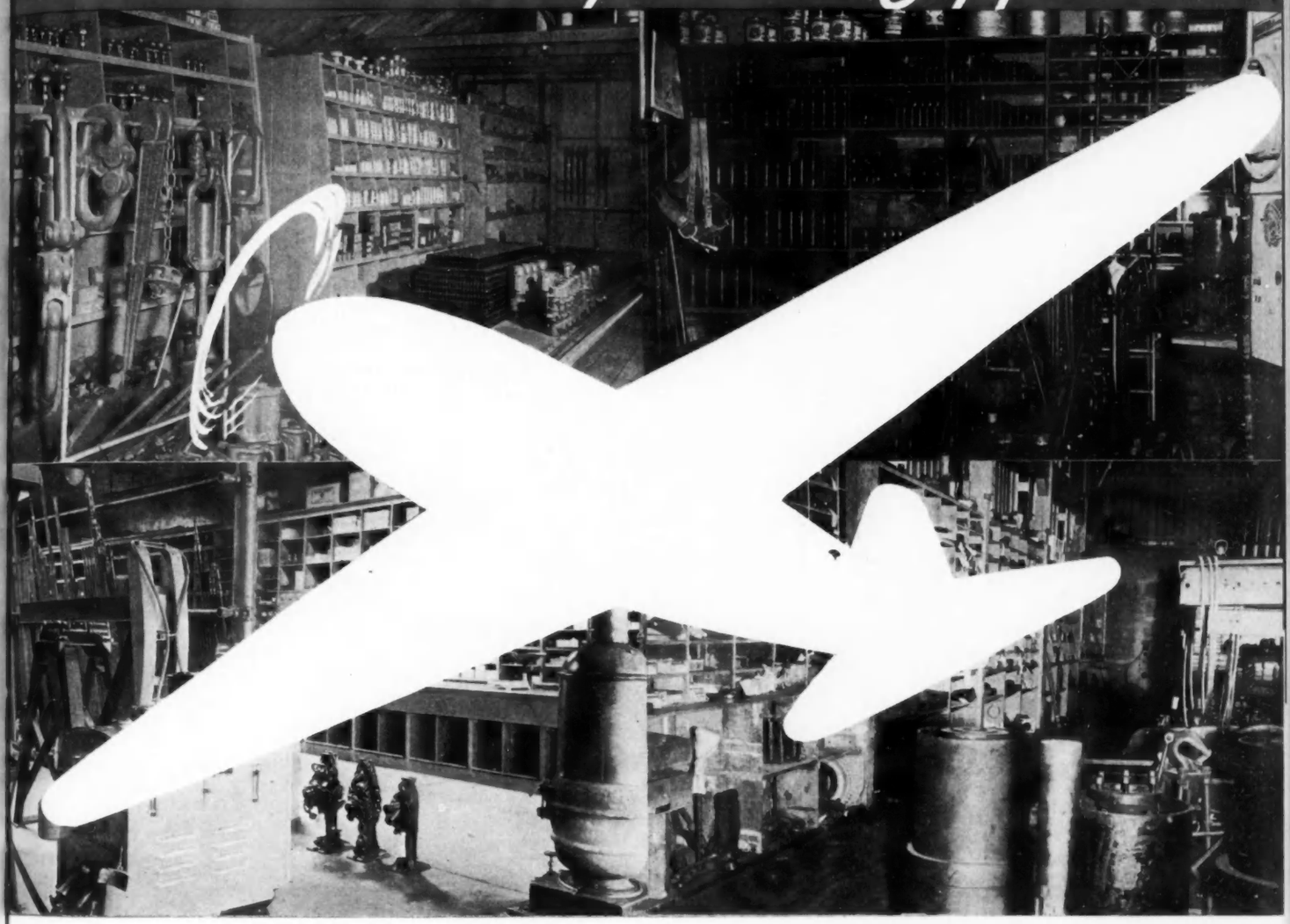

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TULSA, OKLAHOMA

Function of Relative Permeability In Water Flooding

By LYNN C. CONVERSE
Consulting Flood Engineer, Tulsa, Oklahoma

IN THIS article the author has approached the subject from the practical operating standpoint rather than from the scientific concept. The object of the article is to offer experience, and information resulting from experience, toward improving the art of flooding rather than adding anything to the scientific knowledge of the subject. To avoid hair splitting and confusion, certain indirectly related factors have deliberately been left out of the text.

THE six variable factors entering into the complex problem of fluid flow as applied to water flooding may be divided into two groups: (a) the reservoir conditions as found existing, over which the operator has no control and (b) the variables over which the operator has control within definite limits. For convenience they are diagrammed in Table 1.

The three uncontrollable factors combine to make the important factor of relative permeability, the function of which is three fold: (a) as between reservoirs, (b) as between wells within the reservoir and (c) between zones within the well bore. Assuming oil present in commercial quantities, the application of the controllable values to the uncontrollable values makes the economics of any flooding project. To avoid confusion of definitions and to arrive at the relative importance of each variable it becomes necessary to review each factor before attempting to place it in the general picture.

Dry Permeability

The dry permeability of the sand, as the name implies, is the permeability of the sand to air under a given set of conditions after all fluids have been extracted. Since dry permeability is universally understood the subject will not be expanded except to say that it is the foundation upon which relative permeability is built. It is a powerful variable in itself, ranging in magnitude of difference both within wells and within fields often as high as 1000:1. Commercially, individual high and low points must be ignored and the average dry permeability of the zone or area used. In its own right it is sufficiently hard to handle without the further complication of percent of oil saturation and viscosity of the oil.

Percent Oil Saturation

Krutter[1] developes a curve showing the magnitude of influence of percent of oil saturation to relative permeability. Within the limits of the average flood, say 20 to 60 percent saturation, the magnitude of change shown is as 1:9. Expressed as time, all else being equal, the time required for the water to pass from the input well to the recovery well in the 60 percent saturated zone would be nearly nine times longer than through the 20 percent saturated zone.

But what if the 60 percent saturated zone were a 50 millidarcy sand and the 20 percent saturated zone a 200 md. sand? The relative permeability of the two zones would then be roughly as 1:36. This may seem far fetched, but such a condition existed in a flood in Oklahoma; naturally the project did not produce much oil. As a matter of fact a 1 to 4 difference in sand permeability is nothing to worry about, but, if it is increased say five times by percent of oil saturation so that there is a difference of 1 to 20 in relative permeability as between zones in a well or areas in a field it becomes a real hazard.

Viscosity

The viscosity of the oil within a common reservoir, whose energy has been depleted, is usually fairly uniform, hence viscosity is a variable factor mostly as between fields. Mid-Continent flood oils range in viscosity from 3.5 to 40 cp., resulting in a very high magnitude of change. Within a common reservoir viscosity becomes a constant factor, but in laying out the spacing program in a new field it becomes the most important of all the variable factors. There are records of attempted floods where this factor was overlooked and the spacing set too wide to move the oil at the pressure permitted by the overburden.

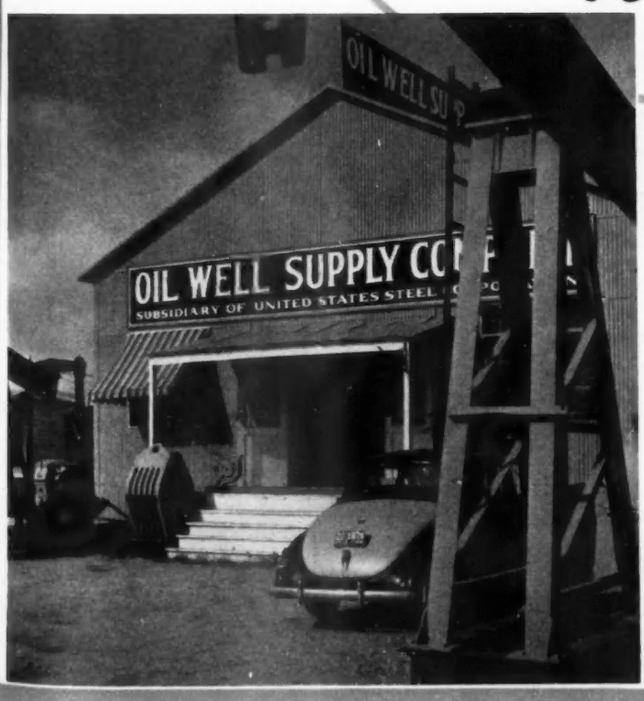
A good illustration of the relation of viscosity to spacing is a comparison of the North Bevins

TABLE 1

Variable Factors	Uncontrollable Factors	Sand permeability Percent saturation (oil) Viscosity
	Controllable Factors	Pressure Distance (spacing) Diameter (input well)

THIS MAP indicates the approximate relative locations of "Oilwell's" 100 branch stores and offices serving the oil fields of the United States and Canada. Not shown are the 9 Export Division Offices in foreign countries.

THESE "OILWELL" SUPPLY BASES ARE FOR YOUR PROTECTION



"OILWELL" branch stores and offices are strategically located for the *supply-protection* of field operations in all oil-producing areas. They are well stocked with dependable equipment and supplies . . . backed by a coordinated system of warehouses and manufacturing plants . . . and staffed by trained *supply men*, experienced in serving the oil industry.

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lease of Max B. Miller & Company in the McCune field, Kansas, and the north end of the Barnsdall flood in Osage County, Oklahoma. Both sands are at identical depths while the sand permeability and percent saturations are practically the same. Everything was equal except the viscosity of the oil which varied in a magnitude of 1:5. In the McCune field with the high-viscosity oil the spacing had to be shrunk to 165 feet from water well to oil well (1¼ acres) while the spacing in the Osage County flood is 375 feet from water well to oil well (6.45 acres). It is significant to note that in the same time interval of four months both floods had reached a daily water-oil ratio of 5:1.

In the modern concept viscosity is an integral part of specific permeability, however, the more obsolete idea gives emphasis to the point if we say that relative permeability is the variable of dry permeability plus the variable of percent of oil saturation plus the variable of viscosity as functioning between reservoirs. Since spacing has such large influence on the economics of a flood and since viscosity has the largest influence on spacing, the importance of having this factor correct should be mentioned. The samples to be taken to the laboratory for viscosity determination should be taken at the wells from the last of the day's pumping in a pressure container with all air excluded. For interpretative use the viscosity should be run at the reservoir temperature. To get the true temperature an old well which has been static for a long time should be used.

It should be remembered that contrary to Bradford experience, flood-produced crude oils in the Mid-Continent are frequently improved in viscosity 50 percent or more over the same oil before being subjected to the flood pressure. During primary production gas coming out of solution occupied the pore space vacated by the produced oil. As pressure is exerted by the flood this gas is reabsorbed by the oil, thus reducing the viscosity and raising the gravity.

Functioning between wells and between zones within a well relative permeability is the combination of the two variables of sand permeability and percent of oil saturation plus the constant of viscosity. It may help if we think of these three factors as the resistance factors while the three variables over which we have control are used to overcome the resistance.

Pressure and input well diameter together with relative permeability determine the spacing and all of them put together determine the average take per foot of sand. The average take and the spacing determine the time interval necessary to displace the oil in the sand within the sphere of influence of the input wells. After the first few weeks of controlled flow the radial advance of the water would be far less than the optimum rate even if the wells were taking 10 or 15 barrels per day per foot of sand. This being the case, take controls the economics of flooding and instead of being limited, every advantage should be used to induce the maximum average take.

The average take per foot of sand per day for the Mid-Continent floods is less than 1.5 barrels, which requires 5.5 years to displace the oil within a 330-foot spacing pattern. This take gives an average radial advance of 1.36 inches per day, which is obviously too slow for the average permeability of the sand and viscosity of the oil. The only change which would result if the take were increased to 4.5 barrels per foot of sand per day would be an economic change. With the spacing remaining the same the time required would be reduced from 5.5 years to 1.8 years. Three times as much acreage could be developed and three times as much oil produced in the same period.

But better still, if the wells averaged 4.5 barrels per foot per day the spacing could be broadened to 440 feet from like well to like well and the time reduced to 3.5 years. Approximately a third would be saved in development cost and two years in time. With much worse than average conditions the writer has been able to introduce 5 barrels per day per foot of sand, while with better than average conditions he is now introducing 20 barrels per foot per day.

The daily water-oil ratio curve is the measure of the mechanical efficiency of a water flood while the average take per foot of sand per day, without channeling or bypassing, is the economic measure of a flood (commercial saturation and reasonable price assumed). Accepting the importance of take, how can we improve it? Spacing, controlling the distance from water input well to recovery well has a minor influence upon take. However, we will assume that the flood engineer making the layout has done a good job so we transfer distance, like viscosity, from a variable factor to a constant factor.

Pressure

The take of a well is directly proportional to the pressure exerted at the sand face, so within reason, one should use the maximum pressure permitted by the weight of the overburden. Assume an average condition of 600 feet to the top of the sand and flooding water weighing .45 pound per foot. Using the conservative pressure factor of 1.6 pounds per foot of overburden we have a permissible pressure at the sand face of 960 pounds per square inch. Assume we are coasting along with 450 pounds pump pressure making 720 pounds at the sand face which introduces 1.5 barrels per foot per day. But if we increase the pump pressure to 690 pounds the take will be increased by 34.72 percent and the time required for 330-foot spacing would be reduced from 5.5 years to 4 years.

Input Well Diameter

The most important variable of the controllable factors gives us a reasonable broad control over take. Doubling or quadrupling the diameter of a well has but small influence upon take, whereas shooting can be made to have an effect upon the capacity of a well. It must be remembered that in heavier shooting it is not a large cavity that is sought but deep radial fractures extending back from the well bore. Certainly the effective diameter, whatever form this may take, is increased by several hundred percent. Much research work has been done on shooting, but it remained for two or three inquisitive flooders to furnish positive proof of take increases by the measurements of volumes of water introduced under known sand conditions with varying shot quantities and loadings.

Along the edge of the Kansas shoe-string fields the relative permeability is often uniformly low. with wells of like condition it was soon found that the take could be increased by heavier shooting technique, by five times or more that of medium water-tamped shots. R. O. Bankson in the McCune field has gone a step farther and is introducing 9 barrels of water per foot per day under the condition

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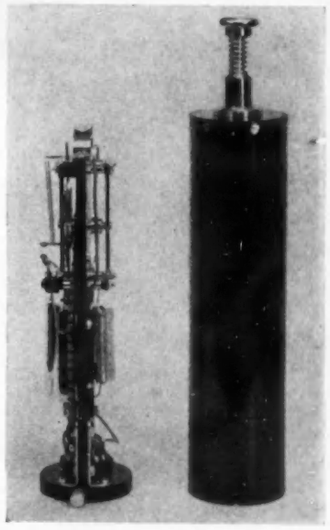

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of 30 to 40 millidarcy sand, 16 cp. oil and water at 450 pounds at the sand face. The shot used was not excessive (3 quarts to the foot, staying 1 foot off bottom and 2 feet below the top), but the shot was fully sand tamped with nothing coming out following the shot. Subsequent analysis of vertical distribution of flow rates show these wells to be taking water uniformly without any channeling or bypassing.

Since by shooting technique alone we can increase the take for a given sand condition by from 5 to 10 times, we can also equalize the take between zones with differences in relative permeability up to the same amount. In doing this the operator automatically reduces the time required to recover the oil and, more important, reduces the amount of unproductive water to be handled while getting the last of the commercial oil.

To see how this works let us assume two sand zones of 10 feet each in a well which if shot uniformly would take 2 barrels per foot per day in one zone and 6 barrels per day per foot in the other. The time required to displace the oil in the 2-barrel zone is say 5 years. On this basis the 6-barrel zone would flood out in 1.66 years, requiring the handling of 60 barrels of unproductive water for 3.33 years or a total of 73,000 barrels. At the very nominal cost of 3/8 cent per barrels for treating, filtering and pressuring, the expense of 73,000 barrels is $273 if flowing is practiced. If in addition, the 73,000 barrels of unproductive water has to be pumped from the recovery wells, the additional cost of handling at 2½ cents per barrel is $1685 making a total avoidable cost of $1958 for the well.

Figure 1 shows a typical core profile of a well as returned by the laboratory with the different zones indicated by broken lines. Since Zone B will return 70 percent of the recoverable oil it is the controlling zone and is given a value of 1 in each of the permeability profiles at the left. Zone profile 1 at the extreme left shows the sand permeability relationship of the other zones to Zone B and would indicate the shot values if corrective shooting were done by sand permeability control.

Zone profile 2 represents the relative permeability at the start of the flood if the entire system were in a viscous flow condition. The profile 3 is the mean average permeability values for this well figured for the conditions of the field in which it is located. It represents the relative values which must be used to allow the water in the different zones to reach the recovery well at the same time.

Figure 2 illustrates diagrammatically in percent of pore space occupied the changes taking place as the water front moves forward past 10 equal divisions of fill-up area between the input and recovery wells. The condition represents a sand having a 40 percent saturation and with an oil carrying capacity of 60 percent while the retention oil equals 20 percent of the pore space. Using the values of Krutters curve, which it must be remembered is based on the condition of viscous flow, the 60 percent oil saturation ahead of the advancing water front would have a value of 1 for the percentage of area it occupies while the area behind the front would have a value of 9 for the percentage of area behind the front. So long as there is pore space unoccupied by fluid it may be said that flow conditions do not exist across the entire area from input well to recovery well. In most of the sand being flooded the pore space occupied by gas is

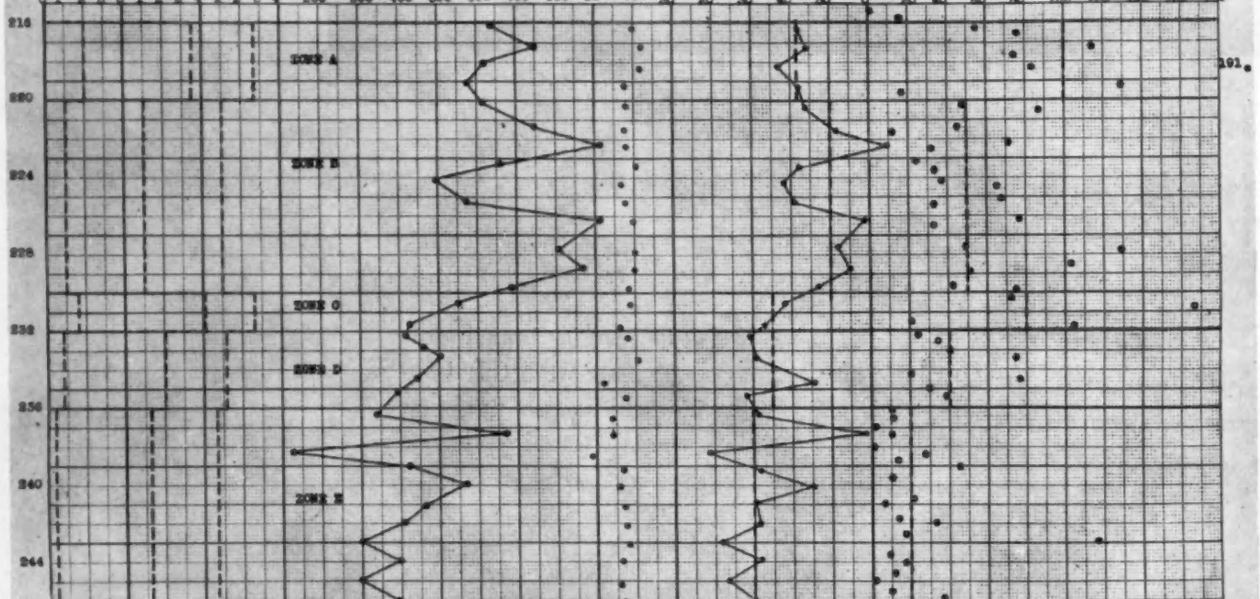

FIGURE 1

seldom as much as 20 percent, so that viscous flow obtains across the entire area at from 10 to 20 percent of the area fill up.

Since the change in oil saturation from 60 to 50 percent represents a permeability change in the magnitude of 1:2.2 it becomes necessary to know and use the proper maximum oil saturation of the sand being considered. This can be determined in the laboratory or the reciprocal of the interstitial water saturation used if known. The retention oil percentage should also be known although its magnitude of change is not so great, being in the ratio of .7:.9 for 30 and 20 percent, respectively.

As it takes little more time to make up a table of mean values than to work out the mean values for an individual well, it is suggested for convenience that each operator have a table covering the conditions obtaining in his particular reservoir. The writer finds it convenient to give a value of 1 to 100 md. sand with 60 percent saturation using permeability from 10 md. to 1000 md. in the horizontal scale and percentages of saturation in the vertical scale. With such a table handy the mean relative permeability profile can be drawn and the shot pattern figured within a couple of minutes of receiving the core profile.

Proper shooting of the well in Figure 1 requires more care than the average. Zone B has zones on either side with approximately 2½ times more permeability, either or both of which could become channeling mediums. Since the object is to equalize the take and since the vertical permeability in this well is almost nil, Zones B and D should be shot heavily, with care taken to prevent any fractures from extending into Zones A and C. Zones A and C should be shot lightly, if at all. Depending upon the character of the oil, Zone E should be shot half again as heavy as Zone B or the well plugged back to 236 feet. Zone F is too far out of balance to have any value and would therefore be cemented off.

As shown by the cost of unproductive water handling, it is even more desirable to hold back very high permeable zones than to boost the take on low permeable zones. In fact holding back the take in high permeable streaks in the center of the sand body is the major problem in some fields.

Shooting correctively to equalize the take of wells in areas of high and low permeability, as so frequently occurs in the shoe-string type fields, is just as desirable as equalizing the take between zones in the well. It is especially desirable, from the standpoint of maximum recovery, to have the theoretical vertical front from each of the four surrounding input wells approach the recovery well uniformly. Unless this is accomplished by shooting it is again necessary to handle large amounts of unproductive water or pinch in the input wells on one side. Pinching can only be done at the sacrifice of oil from the less permeable zones which are usually the zones with the best oil saturations.

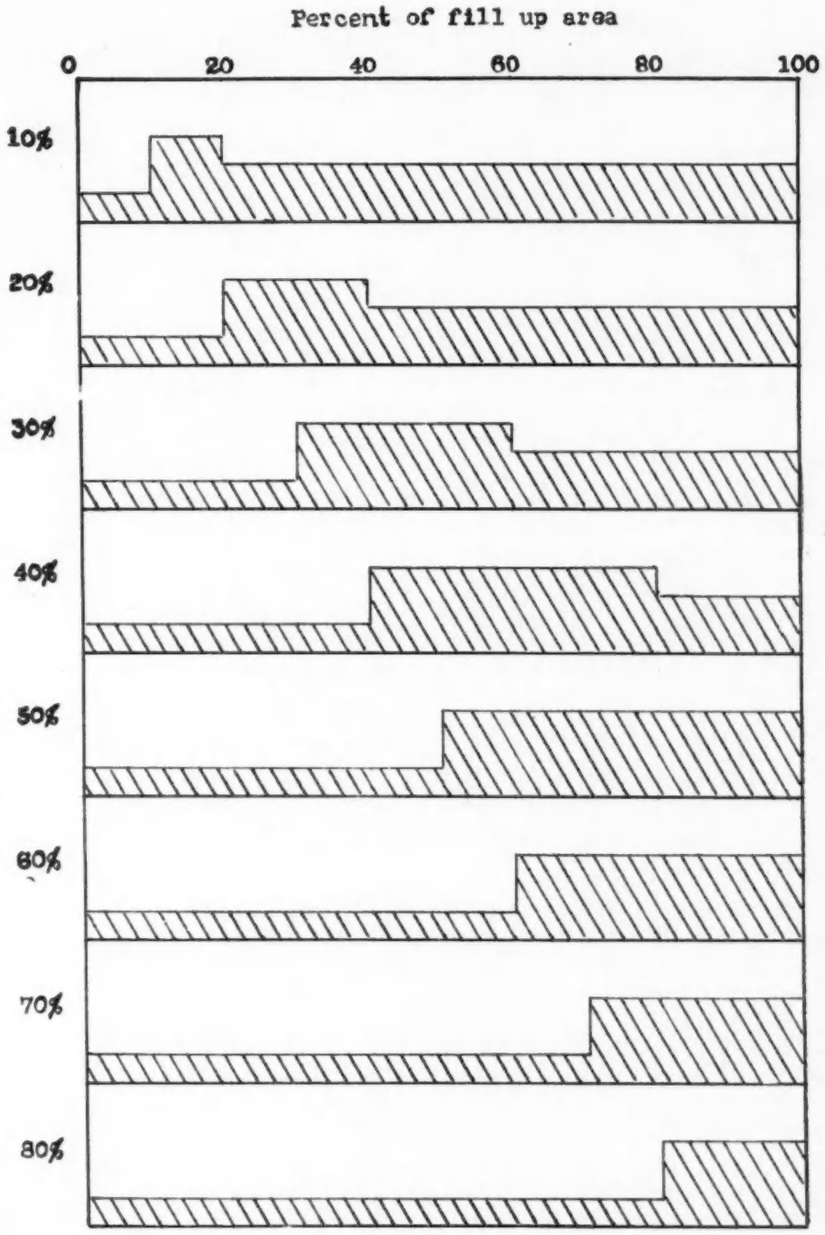

FIGURE 2

Shooting from the dry sand permeability profile is practically shooting for the condition which would exist at the end of the flood. Corrective shooting from the relative permeability which is the condition existing before the flood starts is just as misleading. Using the mean condition between these two extremes for corrective shooting will produce the greatest amount of oil with the least amount of unproductive water. Add to this increased takes by consistently heavier shooting and higher pressures and the economic picture of water flooding is greatly improved.

[1] Secondary Recovery of Petroleum by Air Drive. H. Krutter, School of Mineral Industries, Pennsylvania State College. THE OIL WEEKLY, June 9, 1941.

Drilling Activity Near High Established in 1937

Although September normally brings somewhat less drilling than August, that rule failed to hold this year, and daily average well completions further increased to a new high for 1941, at the same time having approached the peak of the busy year 1937.

In the 5 weeks, or 35 days, ended September 27, United States completions totaled 3590, an average of 718 a week or 102.6 daily. In each of the two preceding months, completions had averaged approximately 99 a day. The September average of 102.6 compared with that of only 82.8 for September of last year, indicating an expansion of 24 percent in field work now as compared with a year ago.

It is to be expected, however, that completions for October will show a decrease from those of September, as some drilling rigs that were in operation September 1 were not active on October 1. Whereas there were 5027 active operations in the United States September 1, including wells drilling, rigging up, or temporarily shut down, the number had decreased to 4693 as of October 1. The latter number was, however, 23 percent greater than the total of 3821 active operations for October 1 last year.

On a weekly average basis, United States completions in the first 9 months of this year were 3.8 percent more numerous than those in the corresponding months of last year, whereas prior to September, this year's completions were short of those for 1940.

STATE OR DISTRICT	TOTAL RIGS IN OPERATION (Drilling, Rigs Up, Shut Down)				DETAILS OF OCTOBER 1, 1941 FIELD ACTIVITY					
					Rigs in Operation			Prelim. Activity		
	Year Ago, Oct. 1, 1940	Month Ago, Sept. 1, 1941	Now Oct. 1, 1941	Percent Change From Year Ago	Drilling	Rigs Up	Shut Down	Derricks	Locations	Total Operations
Alabama	8	6	9	+ 12.5	6	....	3	....	....	9
Arizona	7	5	....	.....	....	....	....	....	....	....
Arkansas	23	34	34	+ 47.8	25	3	6	4	2	40
California	273	264	273	.....	193	56	24	....	113	386
Colorado	32	33	30	— 6.3	7	....	23	1	1	32
Florida	3	3	2	— 33.3	....	....	2	....	....	2
Georgia	2	1	1	— 50.0	....	....	1	....	....	1
Illinois	303	494	429	+ 41.6	336	46	47	10	74	513
Indiana	94	69	57	— 39.4	45	6	6	....	24	81
Iowa	3	....	1	— 66.6	1	....	....	....	....	1
Kansas	224	302	234	+ 4.5	199	28	7	21	26	281
Kentucky	66	47	40	— 39.4	35	3	2	....	5	45
Louisiana	179	251	250	+ 39.7	210	23	17	26	87	363
North Louisiana	56	103	108	+ 92.8	85	15	8	15	6	129
South Louisiana	123	148	142	+ 15.4	125	8	9	11	81	234
Michigan	143	130	154	+ 7.7	99	33	22	30	59	243
Mississippi	23	41	36	+ 56.5	26	3	7	3	2	41
Missouri	16	9	6	— 62.5	....	....	6	....	....	6
Montana	61	79	82	+ 34.4	37	1	44	....	1	83
Nebraska	26	32	32	+ 23.1	20	2	10	2	1	35
New Mexico	106	118	126	+ 18.9	80	12	34	....	21	147
New York	41	110	125	+204.8	87	28	10	....	....	125
North Dakota	....	5	3	.....	3	....	....	....	2	5
Ohio	251	299	292	+ 16.3	212	29	51	18	53	363
Oklahoma	284	423	373	+ 31.3	303	31	39	41	52	466
Oregon	1	1	3	+200.0	1	....	2	....	....	3
Pennsylvania	352	498	421	+ 19.6	306	41	74	28	73	522
South Dakota	1	1	1	.....	1	....	....	....	1	2
Tennessee	9	6	6	+ 33.3	5	....	1	....	1	7
Texas	1,000	1,399	1,313	+ 31.3	1,041	92	180	62	844	2,219
East Texas Field	16	24	20	+ 25.0	12	2	6	1	3	24
East Texas Border Co.'s	13	15	14	+ 7.7	10	2	2	1	1	16
Rest of East Texas	42	74	73	+ 73.8	53	8	12	2	10	85
North Texas	173	174	145	— 16.2	117	7	21	8	172	325
South Texas	211	340	337	+ 59.7	276	25	36	24	254	615
Corpus Christi Area	114	182	181	+ 58.8	154	16	11	12	102	295
Laredo Area	58	98	96	+ 65.5	80	6	10	7	92	195
San Antonio Area	39	60	60	+ 53.8	42	3	15	5	60	125
Texas Gulf Coast	135	145	136	+ 0.7	106	11	19	9	96	241
Texas Panhandle	72	143	142	+ 97.2	119	12	11	7	31	180
West Texas	233	383	344	+ 47.6	282	18	44	10	252	606
West Central Texas	105	101	102	— 2.9	66	7	29	....	25	127
Utah	9	5	6	— 33.3	3	....	3	....	....	6
Washington	....	....	1	.....	1	....	....	....	....	1
West Virginia	213	289	286	+ 34.3	208	30	48	19	51	356
Wyoming	68	73	67	+ 1.5	25	4	38	1	3	71
Total United States	3,821	5,027	4,693	+ 22.8	3,515	471	707	266	1,496	6,455

STATE OR DISTRICT	MONTHLY COMPLETIONS								CUMULATIVE COMPLETIONS—First 9 Months							
	Total			Details for September, 1941					Total			Details for 9 Months of 1941				
	Year Ago (Sept., 1940)[2]	Month Ago (August, 1941)[3]	Latest Data (Sept., 1941)[1]	New Wells Drilled for Oil and Gas			Miscellaneous	Initial Oil Production	1940[4]	1941[5]	Percent Change in Weekly Average	New Wells Drilled for Oil and Gas			Miscellaneous	Initial Oil Production
				Oil	Gas	Dry						Oil	Gas	Dry		
Alabama	2	....	1	....	....	1	....	.....	6	2	— 66.0	....	....	2	.....	.....
Arkansas	17	16	14	8	2	4	....	1,231	142	123	— 11.1	70	2	51	.....	13,941
California[6]	75	101	121	104	3	14	....	52,449	807	863	+ 9.7	698	16	149	.....	506,398
Colorado	1	1	3	1	1	1	....	75	6	14	+139.3	6	2	5	1	780
Florida	....	....	....	....	....	....	....	.....	1	....	.....	....	....	....	.....	.....
Georgia	....	....	....	....	....	....	....	.....	....	1	.....	....	....	1	.....	.....
Illinois	334	375	469	366	....	72	31	154,138	3,018	2,850	— 3.1	1,978	9	618	245	513,659
Indiana	53	51	50	24	5	20	1	2,158	357	401	+ 15.2	200	34	147	20	27,510
Iowa	....	3	....	....	....	....	....	.....	....	5	.....	....	....	5	.....	.....
Kansas	180	195	235	146	5	70	14	180,846	1,510	1,673	+ 13.6	1,103	44	436	90	1,488,705
Kentucky	36	25	50	17	1	29	3	768	260	246	— 2.9	89	4	138	15	4,865
Louisiana	120	111	200	134	9	57	....	25,313	1,251	1,114	— 8.7	737	62	312	3	146,821
North Louisiana	53	53	98	67	8	23	....	7,483	453	450	+ 1.9	283	50	115	2	30,639
South Louisiana	67	58	102	67	1	34	....	17,830	798	664	— 14.7	454	12	197	1	116,182
Michigan	90	60	96	42	9	45	....	70,578	925	613	— 32.0	254	47	310	2	143,907
Mississippi	16	15	23	17	1	4	1	7,223	149	140	— 3.6	107	3	29	1	67,233
Missouri	7	3	....	....	....	....	....	.....	63	36	— 41.4	3	7	26	.....	9
Montana	18	20	15	6	4	5	....	1,072	136	144	+ 8.6	87	35	22	.....	13,996
Nebraska	4	11	10	4	....	3	3	2,904	12	66	+464.0	26	....	33	7	12,541
New Mexico	42	35	43	32	1	10	....	7,294	512	278	— 44.3	205	11	60	2	48,258
New York	68	85	147	90	....	....	57	736	771	729	— 2.9	473	2	1	253	3,363
Ohio	123	134	223	49	109	54	11	1,491	747	1,284	+ 76.3	286	562	331	105	7,067
Oklahoma	145	194	254	145	15	68	26	45,470	1,605	1,638	+ 4.7	885	116	454	183	304,401
Pennsylvania[7]	290	341	361	152	51	13	145	205	2,888	2,981	+ 5.8	1,308	288	94	1,291	1,766
South Dakota	....	....	....	....	....	....	....	.....	1	....	.....	....	....	....	.....	.....
Tennessee	2	3	2	....	1	1	....	.....	21	16	— 21.9	....	3	13	.....	.....
Texas	640	915	1,162	839	35	264	24	432,854	7,603	7,731	+ 4.3	5,650	185	1,806	90	3,187,529
East Texas Field	25	39	38	36	....	1	1	47,847	217	437	+106.5	420	....	12	5	774,097
East Texas Border	3	2	5	1	2	2	....	17	14	23	+ 68.3	4	10	9	.....	356
Rest of East Texas	25	36	70	49	1	19	1	15,779	190	396	+113.7	249	26	117	4	89,806
North Texas	134	228	241	154	2	76	9	50,071	1,618	1,843	+ 16.8	1,169	8	635	31	374,760
South Texas	185	186	289	187	11	88	3	63,977	2,025	1,794	— 9.1	1,182	64	528	20	434,767
Corpus Christi	98	103	172	127	7	38	....	52,454	992	967	— 2.0	731	27	200	9	345,400
Laredo	70	61	82	44	4	32	2	9,485	835	619	— 23.9	339	35	236	9	77,164
San Antonio	17	22	35	16	....	18	1	2,038	198	208	+ 7.7	112	2	92	2	12,203
Texas Gulf Coast	60	68	69	52	2	15	....	10,330	940	575	— 37.3	434	19	122	.....	103,717
Texas Panhandle	38	73	96	82	10	4	....	16,334	496	499	+ 3.2	453	25	20	1	95,037
West Texas	128	225	287	247	3	28	9	224,898	1,543	1,700	+ 12.9	1,537	8	127	28	1,287,649
West Central Texas	42	58	67	31	4	31	1	3,601	560	464	— 15.0	202	25	236	1	27,340
Utah	....	....	1	....	....	1	....	.....	2	2	.....	....	....	1	.....	.....
West Virginia	52	50	96	12	63	16	5	110	422	523	+ 2.7	74	352	82	15	645
Wyoming	4	20	14	11	1	2	....	6,224	105	102	— 0.4	70	4	13	15	37,634
Total United States	2,319	2,764	3,590	2,199	316	754	321	993,139	23,320	23,575	+ 3.8	14,309	1,789	5,139	2,338	6,531,028

[1] Wells completed in 5 weeks, or 35 days, ended September 27, 1941. [2] Wells completed in 5 weeks, or 35 days, ended September 28, 1940. [3] Wells completed in 4 weeks, or 28 days, ended August 23, 1941. [4] Wells completed in 40 weeks, or 280 days, ended September 28, 1940. [5] Wells completed in 39 weeks, or 273 days, ended September 27, 1941.
[6] California figures from the American Petroleum Institute, except for September, 1941. [7] Bradford, Pennsylvania figures from The Producers Monthly.

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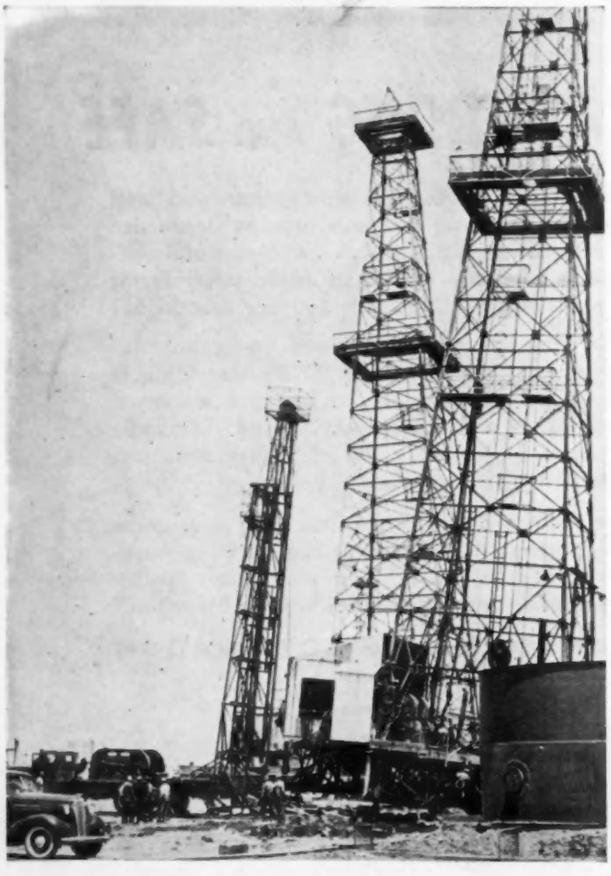
A LIGHT-WEIGHT, truck-mounted portable drilling and well-servicing unit has been pressed into moving service by a California operator. With the telescoping derrick extended, the mast serves as a long boom, and with it compressed it affords straight lift with high capacity. When not required for servicing, the unit is not allowed to stand idle but assists in moving large, 8000-foot drilling rigs with 122-foot derrick mounted on skids and substructure.

One half of the large rig includes the pumps and pump engines, entirely unitized, with a total weight of 85 tons. In practice, the portable derrick is used to lift one side of the equipment, including the substructure, to such a height that crawler tracks can be positioned beneath. This operation involves an actual lift of about 130,000 pounds on the engine side of the derrick unit.

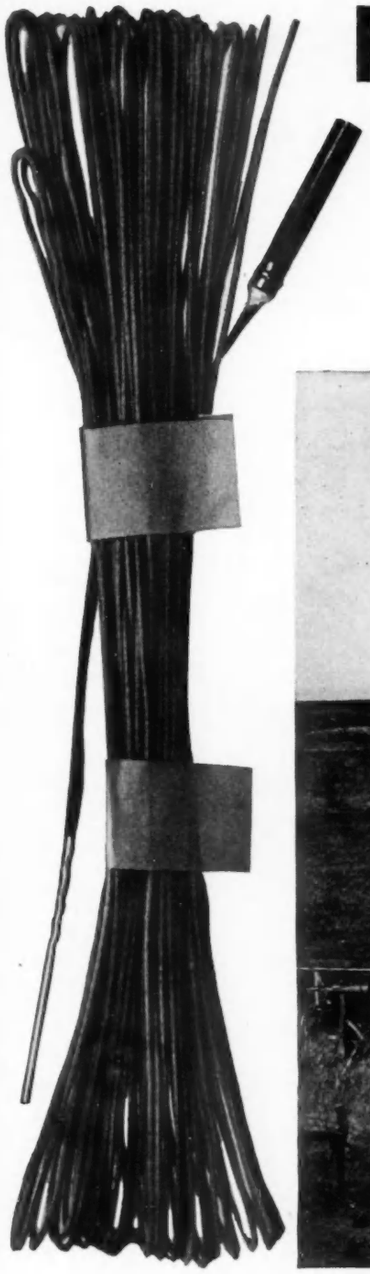
The portable derrick is then moved to the other end of the unit where that side is lifted for positioning a second set of crawlers. Following this, the entire equipment including the derrick is dragged to the new location by means of a tractor.

In correctly placing the standard equipment on location at its destination, the portable unit is again used. This practice has proven a time saver, and with the 90-foot, 200,000-pound derrick used, the operator has power and capacity combined with ease of operation at his disposal. Such assignments are filled by the portable unit while it is not engaged in its own drilling or servicing tasks.



The heavy side of standard derrick, motor, draw-works (8000-foot drilling rig) being lifted. Weight approximately 130,000 pounds.

Pump and pump engine being lifted to allow placement of crawler underneath. Lift about 40 percent of 45 tons, or about 20 tons.



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SEISMOGRAPH EXPLOSIVES

Joint Project Solves Field's Fresh Water Problem

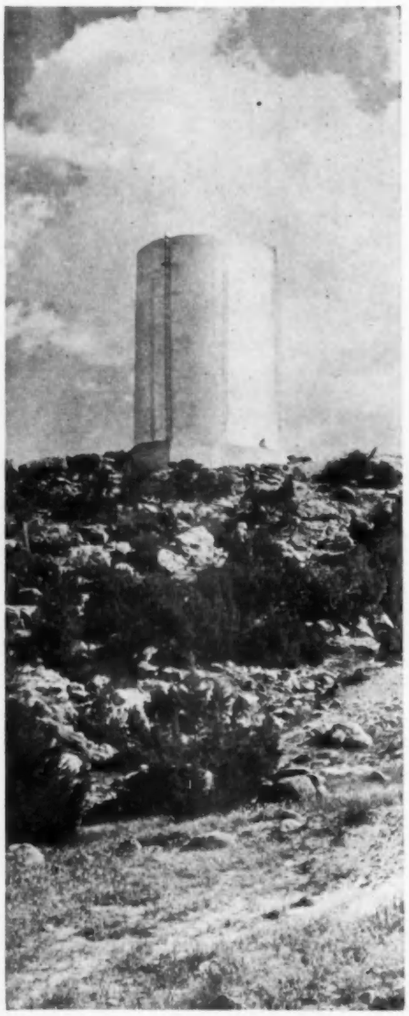
By FRANK B. TAYLOR, Staff Writer

LACK of surface or other dependable water source has handicapped operators in Lance Creek field of southeast Wyoming for some years. Attempted solutions would be found to be only temporary with the problem recurrent. In anticipation of a long-range program of development and repressuring, operators recently communitized a project to supply water to camps and operations.

A survey and geologic interpretation of that area reasonably adjacent field plants and company camps indicated a favorable location for water wells five miles from major operations. Subsequent drilling provided artesian flow. A greater than necessary volume of production has been developed, and necessary lines have been placed. The community system has been in operation four months at this writing.

Communitizing the water project allowed a material economy in acreage at the source of supply, in transporting lines, in maintenance costs and in operating expense, and allowed a single, complete system devoid of unnecessary duplication. In addition, accounting and inspection could be centralized in an office of one of the participants. It was agreed that costs of the initial investment be prorated to the various companies connected, and that operating and maintenance costs be allocated on a basis of volumes used. In view of regular work within the field, the operators contracted the major portion of the water system.

A test drilled five miles from field production, located at an elevation somewhat higher than production but still within enclosing escarpments, found water-bearing sand at 425 feet. Four additional wells were subsequently drilled to assure a plentiful supply. Recent tests of the wells now being produced show No. 1 producing 35 gallons per minute; No. 2, 30, and No. 5, 140. Nos. 3 and 4 were shut in.



The main reservoir of the system has a total capacity of 6450 barrels. From this reservoir, water flows by gravity to tanks of the different users.

Production from the wells is artesian flow. The producing formation is a medium-grained sand lens just above the Morrison shale. Tests have proved the water to be soft, to carry a minimum of alkali, and to be suited to use as drinking water without treatment.

Each of the wells is cased with 10-inch. A special casing head is used having a ½-inch vent in the center and a side outlet through a valve and into a fluid meter of the displacement type. Water from each well is measured. Normal artesian pressure at the well-head (11 pounds shut in and 4 pounds flowing) is sufficient to flow production into a concrete settling basin. From here, after being baffled and automatically controlled for uniformity between consumption and production, the water gravity flows into a reservoir tank in the producing area. The main line is 6-inch, on which a hot coat has been applied. Due to extreme low temperatures the line was buried 5½ feet.

As the main line of the system is gravity flow, and as two creek beds, dry most of the year, are crossed, provision was necessary to bleed off any air that might accumulate in high spots or overbends. If sufficient air were allowed to gather, flow would be effectively blocked. Twenty-three blow-offs were provided as insurance against such portability. As an added precaution, a booster has been installed to provide lifting power in case of failure of the present facility.

Water from the wells is discharged into a 43-foot reservoir. Located at a high point near field operations, the reservoir gravity feeds smaller tanks at camps and operating plants. Volumes handled are metered, and accounting is done by the company operating the system.

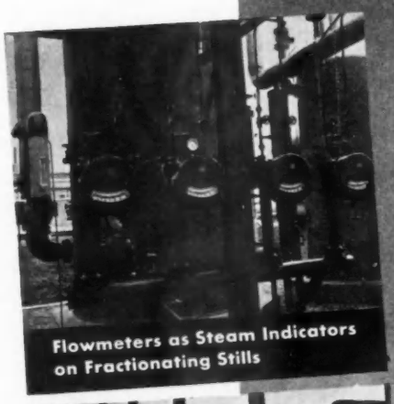
An average summer demand was checked at 10,943 barrels per day. During the same 24 hours, three producing wells put into the system 12,052 barrels with that volume exceeding demand going into storage. Continental Oil Company, Rocky Mountain Pipe Line Company, Ohio Oil Company and Argo Oil Company are co-owners of the system.

The key *to successful* repressuring

The modern way of oil and gas men is to drag even the "squeal" out of producer and reserve wells! And it works — when plant and field conditions and equipment conform strictly to the right engineering set-up.

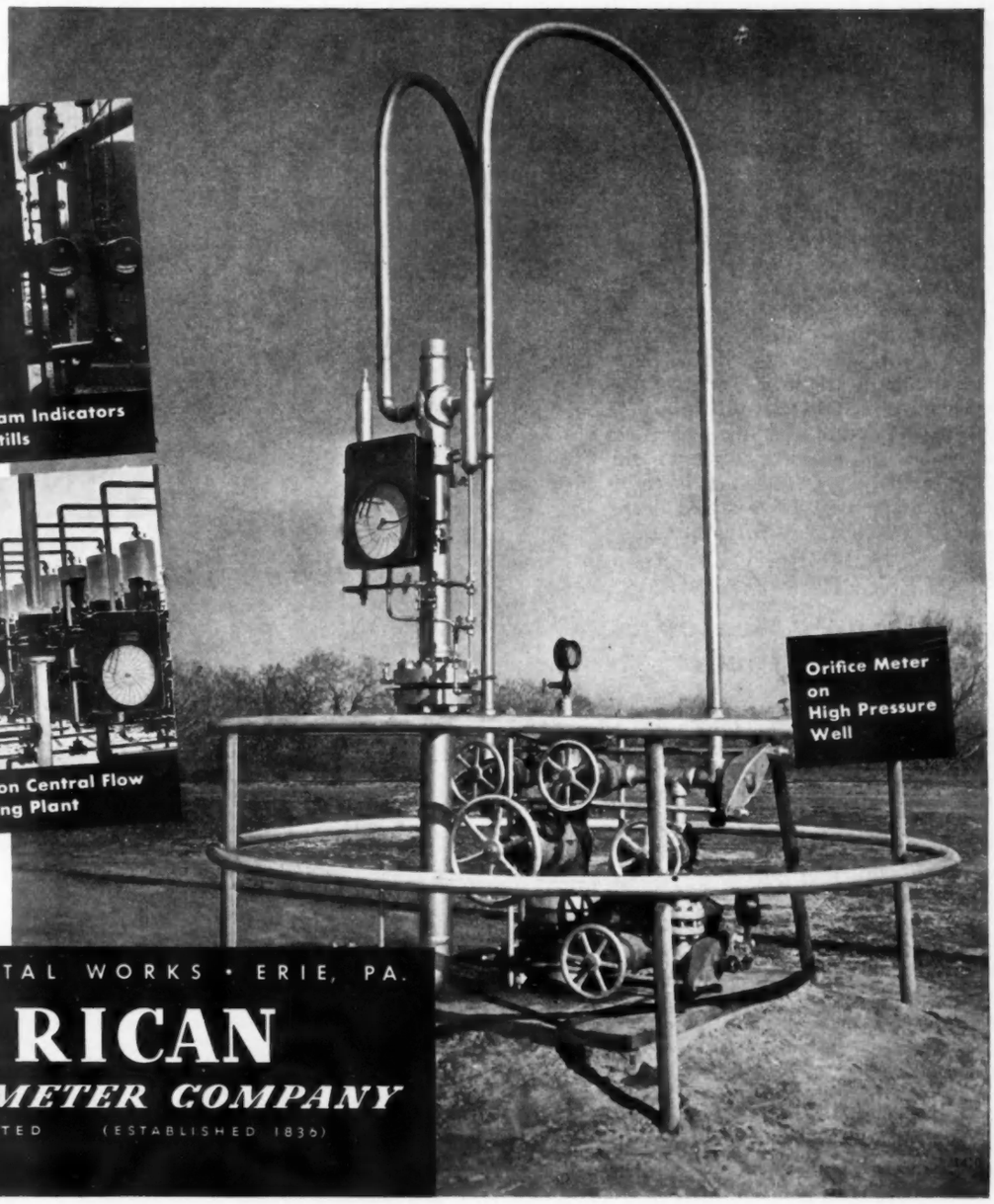
Talk with the engineers and maintenance men. Learn why METRIC-AMERICAN Orifice Meters and Flow-meters are specified for so many of these ticklish jobs—where to be inaccurate or slipshod or fragile may put a dent in profits!

NOTE: Construction and design features of these dependable instruments are detailed in American Meter Company's engineering bulletins which will be mailed you upon request.



Flowmeters as Steam Indicators on Fractionating Stills

Orifice Meters on Central Flow and Repressuring Plant



Orifice Meter on High Pressure Well

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Practical Operating Hints for

Octagonal rack, made of sheet steel base with pipe frame and enclosed central well, protects hose from kinking or cutting.

1. ROTARY HOSE

Welded Steel Carrier Protects Equipment

TO prevent damage to rotary hose when changing locations, Harry L. Edwards Drilling Company uses a combination hose rack and tool box.

The unit is built on a skid of 4-inch drill pipe. The hose is coiled between upright posts of 2½-inch pipe. Sections of steel plate welded between the inside posts form a tool box in the center that may be used to move connections, fittings and other small parts. The box is eight feet in diameter, and two feet deep. —*W. M. Kelly, Bay City, Texas.*

2. SILENCER

Feed-Water Heater as Exhaust Header

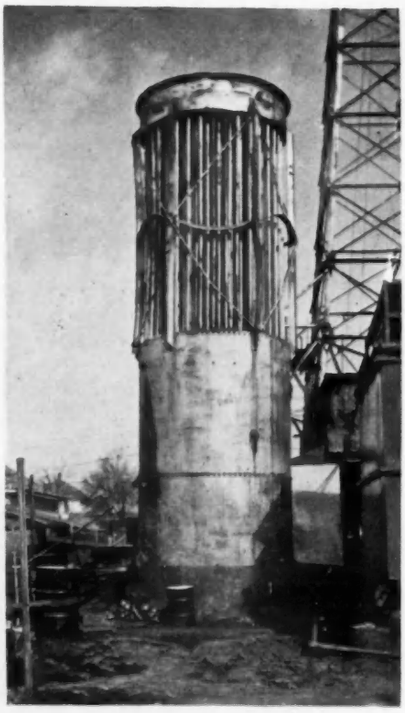
AN OPEN type boiler feed-water heater has been converted from a steam drilling rig to serve as a shock absorber and condenser on a drilling rig by Owen Drilling Company, Enid, Oklahoma, recently acquired by Champlin Refining Company.

Exhaust from both drilling engines and slush pumps is piped through two 8-inch lines, entering below the trays and passing upward. This noiseless drilling is required in the Oklahoma City townsite.

The unit is approximately 25 feet high and 8 feet in diameter. As the steam is condensed, it is returned to the mud-conditioning pits for further use in fluid admixtures.

In ordinary use for a steam rig, the exhaust comes into direct contact with the feed water to heat it. A trap removes the oil from the steam before it enters the heater. Oil and other foreign matter is removed from the discharge water by coke placed in the bottom of the heater. Scale needs to be removed from the trays frequently.

Vertical pipes or coils are 2-inch and closely spaced, serving equally well for condensing steam whether derived from exhaust or manifold of engine cooling system.



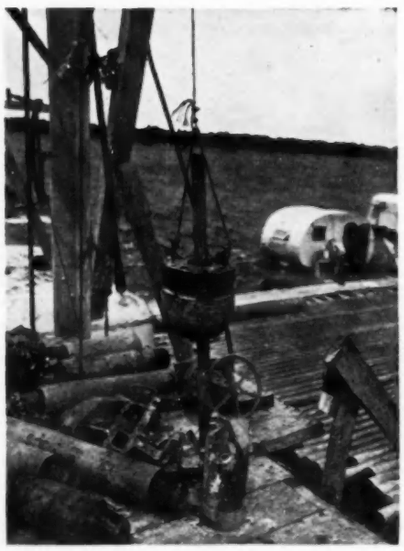
Vertically mounted tube and shell unit absorbs exhaust pulsations readily.

3. COMPLETION

Packer for Drill Stem Readied on Line

A PACKER, made up and ready to be dropped at a moment's notice into place to seal off the drill stem, is kept on one rig floor in a spot where it is out of the way, free from possible damage through normal rig operations, yet instantly available.

The packer is suspended from two half-inch bolts screwed into



Supporting line and quickly removable stake keep this packer available.

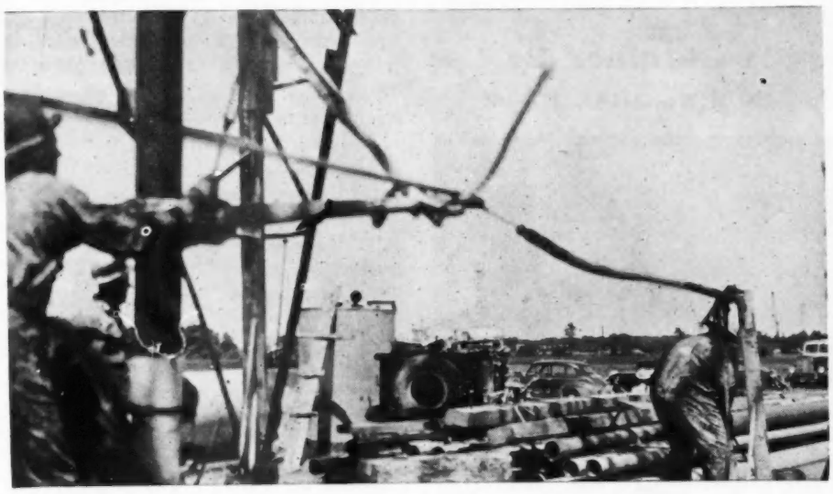
holes in the top ring, bits of soft rope serving to hang the assembly from a light line, slung high in the derrick.

The entire set-up is placed over a short stub of two-inch pipe fastened at the edge of the derrick floor, and the supporting line so adjusted that the packer swings some 18 inches off the floor.

To use, the two-inch pipe is pulled from its socket, and the packer, still suspended on its line, swung across the floor and dropped into place by untying or cutting the bits of soft rope yarn.

The packer is readily inspected for quick application as it hangs on its swing line, and the condition of the packing elements may be checked for resilience in advance of being subjected to the sudden load of an impending loss of well control or possible blow-out.

THE DRILLING RIG . . .



Tail spring, attached to snubbing post on rack side of derrick floor, returns the tongs for another bite without manual assistance.

THE practical operating hints for the drilling rig and production man, appearing in these features each week, are secured from oil fields everywhere and offer suggestions that will help to improve field efficiency and safety. The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, THE OIL WEEKLY, Houston."

4. CASING

Spring Speeds Tongs On Return Swing

WHEN running casing in a well before cementing, a long helical spring attached to a snubbing post and to the eye of the pipe tongs may be used to return the tongs to position for another "bite" when the operator is using the cathead for making up the threads after the spinning line has been used to run the stalk of pipe into the collar.

5. EQUIPMENT CARE

Framework Encloses Shale Shaker Unit

BY WELDING 2½-inch uprights to the ends of the usual shale-shaker skids, and joining them by transversely braced cross members, one drilling contractor encloses his screen unit with a frame which amply protects it when loaded on the truck for transport to the next job.

A sling around the two cross members, or hooks slipped into the opposite ends of the two upper members of the frame, enable a winch truck to pick up the unit without putting chains or lines around the screen with possible damage to the unit and consequent delay for repairing.

The frame also serves to protect the screen during drilling operations, and to act as a guard to prevent men from coming too close.

The steel frame adds but little to the weight of the entire shaker.

Cross-braced frame of 2-inch pipe encloses and protects entire shale shaker.

6. TOOL RACK

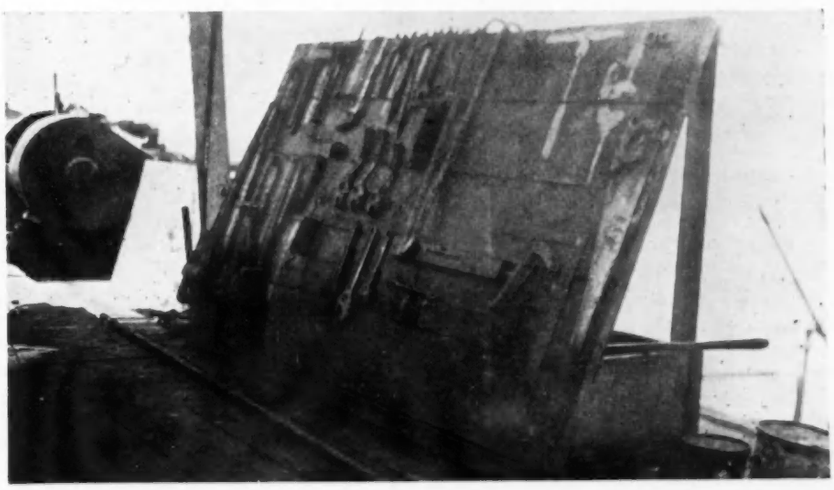
Display Board Speeds Selection

OPERATING efficiency may be increased by racking all small tools to a special housing.

The rack pictured is five feet high by eight feet long, and is bolted to a steel angle frame.

The shape of each tool is painted in gray upon a red background so that a missing tool may be promptly identified by its outline. Over 50 odd tools may be handled by this manner, each mounted to facilitate working efficiency and adding materially to the appearance of the rig.

Inclining the tool board instead of the usual vertical mounting prevents loss through vibration and insures retention of items on supports, ready for immediate use.

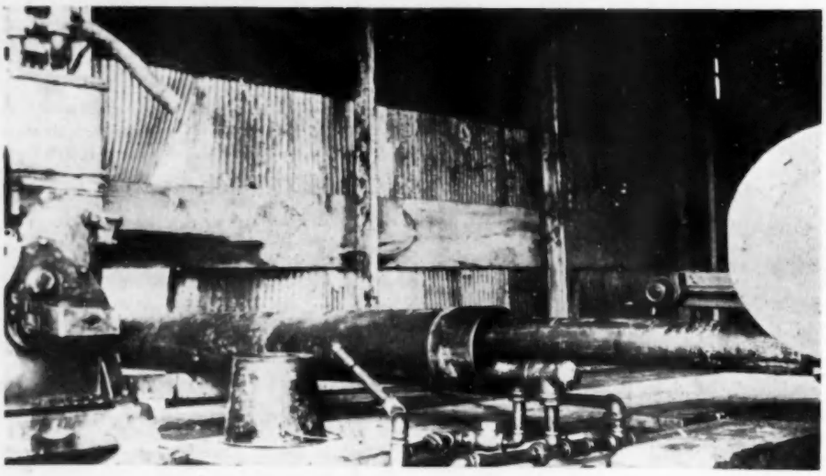


Set at an angle of about 75 degrees, this inclined tool board clears the derrick walkway, yet presents its lading for instant selection.

Practical Operating Hints for

1. SAFETY

Adequate Hot Water Supply Obtained by Use Of Exchanger in Outlet of Exhaust Pipe



Easily made return bends carried within the exhaust pipe serve as heat exchanger to provide ample hot water supply for lease use.

UTILIZATION of waste heat carried from the lease power plant through the exhaust pipe is attained by one company through the use of exhaust heat to provide water for bathing facilities.

The horizontal exhaust pipe is extended by slipping an extension loosely over the main pipe, and setting in this enlarged section a return loop of two-inch pipe. Water for the showers is carried through this loop and, because of the relatively slow flow through the two-inch as compared with the restricted area at the sprays, the water remains in passage through the loop long enough to be raised to the desired temperature.

By doubling the amount of two-inch pipe through the use of a coil instead of the simple loop, the water may be brought to a much higher temperature, although under normal settings the pipe is not exposed to high enough exhaust temperatures to result in its being burnt, even though left without water.

Provision of cleaning facilities, including an ample supply of hot water for bathing, is a safety measure, as men are encouraged to remove oil-soaked clothing before returning home, or exposing themselves to possible fire while driving a car or being in close proximity to someone who might not recognize the menace of oily apparel.

2. ELECTROLYSIS

Current Interchange Aided by Direct Bond

BONDING of a tank to its attached pipe line provides more positive drainage or distribution of currents than may be secured if the pipe itself, with a series of screwed or flanged joints, be relied upon as carrier.

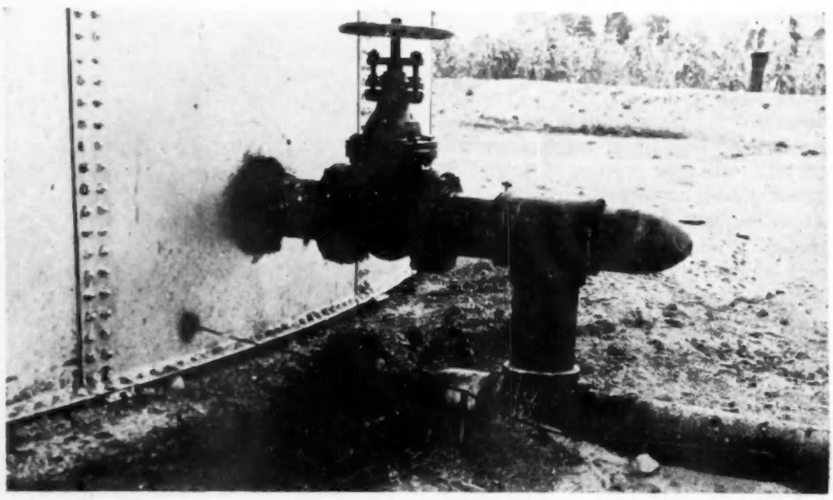
A heavy copper cable, brazed to the tank plate and carried past the various joints to the end of the welded pipe line, provides direct and continuous path for electric currents which might otherwise set up electrolytic action and cause accelerated corrosion.

Where it is desired to isolate the tank from stray currents in the pipe-line system, so as to prevent it from becoming anode for ground current distribution, it is of course necessary to see that all through metallic contact between pipe and tank is severed. Dielectric washers and gaskets, sheaths for flange bolts, and insulation of walkways are then used to insure halting the currents before they can reach the tank and damage the bottom plates.

3. SAMPLING

Centralized Flow Taps Simplify Fluid Tests

TO FACILITATE obtaining fluid samples directly from individual wells for shakeouts, one operator constructed a simple valve-controlled device that ties into the various flow lines as they converge near the separators. Small copper tubes connect with the flow lines from each well that flows to the tank battery and convey fluid samples to an open drum situated nearby. Individual valves near the ends of the small lines are ordinarily kept closed, maintaining a constant flow of fluids to the separators; however, when one well is to be tested for fluid analysis, the



Bonding of tank plate and run of pipe line across possible gaps introduced by valve and fittings insures current drainage.

proper valve is opened and a sample is obtained from the line.

Control valves are marked for identification to facilitate procuring test of the proper well, and all valves are arranged in a row around

Sampling valves around rim of drum permit close check of oil drawn.

the top of the drum, spaced conveniently for manipulation by one who takes the samples.

The steel drum is placed on a small elevated platform directly above the overflow-recovery pipe from the storage tanks, and accumulated fluid from the shakeouts is drained from the drum by means of a 1-inch pipe outlet which leaves the lower end and connects with the recovery system. A valve controls egress of this fluid, allowing drum container to remain filled until desired to empty.

The arrangement allows testing of individual wells for fluid content at a centralized location, as every well that flows into the separators is tested without necessity of going to the various Christmas trees to procure the shakeouts.

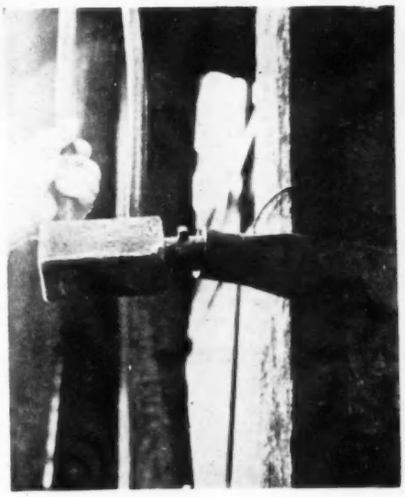
Prevention of waste in such an installation is of small moment insofar as the amount of oil saved is concerned, but the suppression of a possible fire hazard is important, the closed sump into which all lines drain permitting close control of waste oil and its venting or draining into a closed system as soon as quantities on hand justify.

Clean appearance of the lease is greatly aided by such a system to include all valves opened while samples are being secured, the slow drip from a filling nipple or spout being chargeable with many of the unsightly dark spots around tanks, shakeout stands and sampling manifolds. Such spots are more easily prevented than removed by hand cleaning.

4. ROD HANDLING

Detachable Rack for Pulling Job Storage

VARIOUS methods and devices are used when pulling rods on a well for conveniently racking or holding back the lower ends of the rods as they are pulled and hung from the rod-hanger. Instead of attempting to build a permanent frame-work or hold-back an efficient portable method may be installed at each well.



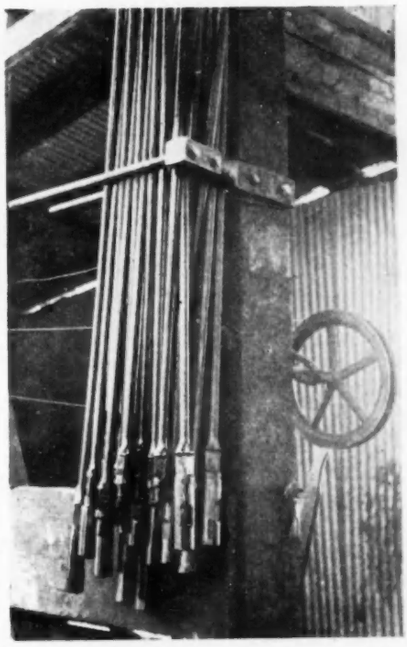
Locking device for attaching portable member to fixed support.

The unit consists of a double-pronged fork that can be quickly attached in a horizontal position to a fitting mounted on the headache post, or any other convenient point, into which all the rods can be placed and held back from interference with other operations. The fitting on the headache post is allowed to remain permanently, while the fork is taken down after each job, to be carried in the tool box until the next rod job.

The base of the fork is made of a 2-inch square block of cold-rolled steel 6¼ inches long of which 1¾ inches on one end is turned down to a diameter of 1-3/16 inches. Two holes, 2 inches apart, are then drilled through the block, into which two 20-inch lengths of ¾-inch sucker rod are inserted and welded to the block on the back side. A 5/16-inch pin is driven into a hole drilled part way into the center of the short length of turned-down section, and allowed to project approximately ½ inch.

The permanently mounted fitting consists of a 10-inch length of 1¼-inch tubing, flattened for all but 3 inches of its length. A ⅜-inch wide J-slot is cut in the round end, the right-angle turn of the slot being made at the point where the pin stops when the pin end of the fork base is inserted into the opening in the tubing. The straight section of the slot should be on top, and the right-angle turn cut far enough to allow the fork to pass through a 90-degree angle before coming to rest in the normal horizontal position—the entire action being similar to that of a bayonet mount.

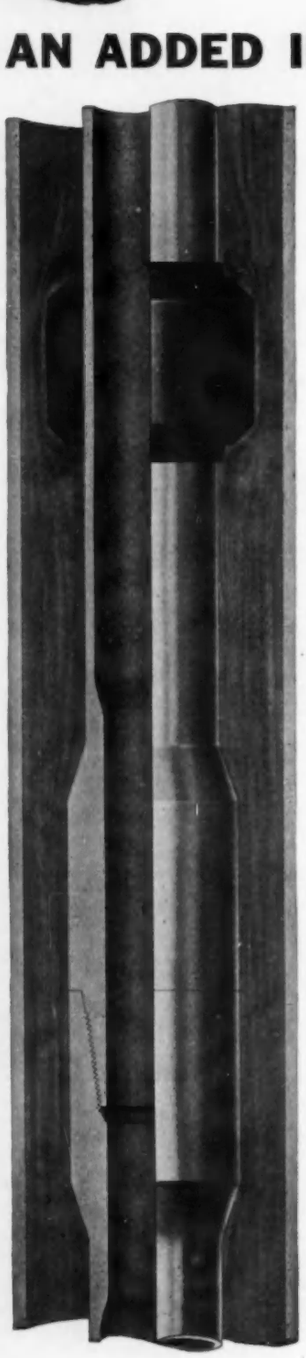
The permanently mounted section of this quickly assembled



String of rods closely retained by spacing rods on hold-back device.

hold-back unit is lag-screwed or bolted approximately 5 feet above the floor. Modifications can easily be made of the device, such as the length and number of the prongs, depending upon the number and size of the rods in the well.

AN ADDED IMPROVEMENT FOR YOUR DRILL PIPE



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HIGHLIGHTS IN THE WEEK'S NEWS

Control

Eleven States to Send Representatives to Compact

Eleven oil producing states are expected to send representatives to the Interstate Oil Compact meeting at Fort Worth October 16. State and federal officials concerned with oil production have been invited.

Robert E. Allen, director of production, Office of Petroleum Coordinator, and E. DeGolyer, director of conservation, will attend. Allen will discuss "Steel Priorities," and DeGolyer's subject will be "Conservation." Dr. A. G. White, chief of the Petroleum Economics Division of the U. S. Bureau of Mines, will discuss that bureau's Forecasts of Supply and Demand.

Texas Proration Hearing Is Set for October 20

The monthly state-wide proration hearing held by the Texas Railroad Commission is scheduled for October 20. No matters of unusual importance are scheduled for discussion.

However, since the appearance of federal conservation agents at the East Texas hearing held by the commission last week, these meetings have taken on unusual importance. In the event that E. DeGolyer, conservation director, attends the meeting and appears on the bench, as he did at the East Texas hearing, testimony presented by the operators may take a different trend. So far, the federal agents have attempted to obtain results by persuasion. Whether this system will succeed is yet to be determined, but with full information gained from hearings attended, these representatives of Washington will know whether greater pressure is necessary.

East Texas Order Encourages Salt Water Injection

The Texas Railroad Commission last week during a hearing to consider disposition of salt water in East Texas, had plans submitted to drill injection wells and to enable all operators to participate by allowing the production of 1 barrel of oil extra for each 50 barrels of salt water returned to the reservoir. A maximum allowance of 6 barrels of oil per day was provided by the order proposed.

The hearing was held and the order presented as a result of pressure from E. DeGolyer, Federal Director of Conservation from the Office of the Petroleum Coordinator in Washington. At least this was the report which was circulated privately; no official information could be obtained on this point.

At any rate, DeGolyer attended the hearing, and at the invitation of Commissioner Olin Culberson, was seated on the bench. With DeGolyer were W. J. Murray, Jr. and John Murrell, petroleum engineers who have been added to his staff recently. Until August 1, Murray was associated with the commission.

Engineers were called on for cost figures on the disposal systems operated in the field for the past two years. Because of the limited experience with these units, the figures included some estimates, especially of time allowed for amortization; these figures varied from five to ten years. Another questionable figure was that used for determining the input capacity of the wells. A maximum capacity of 5000 barrels was assumed in some cases. That amount has been injected in some wells where pressure was used. It appeared that the maximum amount to be injected by gravity was about 3000 barrels; however, none of these figures could be regarded as authentic except in particular cases.

The volume which the sand would receive varied, not only according to local reservoir conditions, but in proportion to the size of the pipe through which the water is injected, and the amount of sand face exposed. The figures presented by 10 larger companies show that the cost varied from ½ cent to 4 cents per barrel of water injected. The average was about 2 cents per barrel, and it was on this basis that the order was prepared. In other words, the 6-barrel premium allowed was expected to cover injection costs.

For some time the commission has followed the procedure of distributing among other wells on the same lease the allowable for an oil well in East Texas which is converted into a salt water injection well. The new order proposed by the operators was carefully drawn to avoid disturbing this factor in existing systems.

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Transport

Moffett Says Ickes Diverts Tankers British Would Return

James A. Moffett, chairman of the board of California-Texas Oil Company, said in New York last Thursday he had been correctly quoted by the press concerning his statement made October 3 that the British want to return American tankers borrowed earlier this year. Without divulging his sources, Moffett said, "I am advised that the British have offered and are anxious to return tankers borrowed from American operators for American domestic requirements and that these tankers have been sent to the Dutch East Indies, South America and Australia under orders of the Petroleum Coordinator's office."

Britain, Moffett continued, began improving handling and routing of tankers after last April and at present is using the ships with considerably more, though not yet maximum, efficiency. He said he had learned of the British desire to return some tankers only a few days before making his statement of October 3 but believes this desire was known in the coordinator's office a month or two ago. He considers that not merely 8 or 10 tankers but the majority of the 70 some odd ships being used in the British shuttle service could and should be returned soon.

Asked why Washington had not pressed more vigorously for improved handling and routing of tankers by the British earlier this year, Moffett said he felt it was because some officials saw in the East Coast oil shortage an opportunity for tightening government control of the oil industry.

Concerning use of tanks cars in moving oil to the East Coast, Moffett said in his October 3 statement, "I find in 1940 that the industry had 148,000 tank cars and moved but 60,000,000 tons. In 1917 there were 57,000 tank cars, which transported 30,500,000 tons of petroleum. On the basis of 2.6 times as many tank cars in 1940, if you take 2.6 times the number of tons of petroleum products moved in 1917, it would indicate that approximately 80,000,000 tons could be moved, or 20,000,000 tons additional, equalling 140,000,000 barrels, or 11,500,000 barrels per month, or an average of 383,000 barrels per day. No one will dispute the fact that in the last five or six years a marvelous improvement in railroad equipment and speed of transportation has been most noticeable, so that a greater movement of tonnage than that which took place in 1917 might well be expected.

"Let's check it another way. Many of these cars have been operating on a five-day week. If operated on a seven-day week, 40 percent increase would take place. A 40 percent increase on the operation of 60,000,000 tons in 1940 would equal 24,000,000 tons. Or, if you were to take 148,000 tank cars and secure a 40 percent increase in efficiency, you might probably say that you had

59,000 idle tank cars instead of 20,000 as reported.

"The excuse here is price ceiling, or high freight rates. It seems to me that cost should be no object in time of war. The full increased cost of the movement by tank car was estimated to be 3 cents per gallon over the then existing cost. Averaging same: 200,000 barrels at 3 cents per gallon, plus 1,000,000 barrels at zero would result in an overall advance in price of ½ cent per gallon

"I hope and trust that a heavy movement of trainloads is now taking place. It is apparent that the equipment is available. It is apparent that the same thing should be done as in 1917 to supplement the supplies on both the Atlantic and Pacific seaboards. It is apparent that with the withdrawal of tank steamers in April that supplemental supplies would have to be made available but that nothing was done to bring this picture into the open by the petroleum coordinators until the hearings of the special committee of the Senate in the latter part of August and early September. This should have immediately taken place when those tankers were withdrawn."

Movement by Tank Car To East Being Increased

In keeping with the trend to step up tank car deliveries to the East Coast, Shell Oil Company last week announced that daily shipments of 460,000 gallons of products normally moved by tanker will be transported by tank car from the Mid-Continent and Gulf Coast regions.

Of this amount 250,000 gallons of finished products will be shipped each day by rail from Shell's refinery at Houston to points as far away as Maine and the remainder, which is Illinois crude, will be delivered in tank cars to companies having refinery facilities on the Atlantic Coast, thereby releasing tanker space for gasoline shipments from the Gulf Coast.

Shell estimates this move will save use of three tankers. Already gasoline and other products are being moved in volume up the Mississippi river via the Great Lakes and New York barge canal to the Atlantic Seaboard.

The daily throughput of Shell's products pipe line which runs from the company's Wood River, Illinois, refinery near St. Louis to Toledo, Ohio, was stepped up to carry large amounts of products within reach of the Atlantic Coast. Tank car shipments of gasoline from Houston to points as far north as Minneapolis were started in order to relieve pressure on the Wood River refinery, whose facilities are taxed by the East Coast demands normally supplied by tanker shipments from Houston and New Orleans.

Gulf Refining Company is making regular shipments of household heating oil from its Port Arthur refinery to New York City in 60-car quantities.

In an apparent move to forestall any exhaustion of its stocks, the company evidently elected to move this product by rail to be prepared for early season demand.

Sinclair Refining Company recently stepped up its rail shipments to 14,000 barrels of crude daily from Mississippi and also from point near Lima, Ohio. The latter involves movement of Mid-Continent grades via pipe line to Ohio.

Companies Abandon Tanker Building Program

Abandonment of a cooperative tanker building plan to construct 36 tankers was announced last week by J. Howard Pew, president of Sun Oil Company, and W. S. Farish, president of Standard Oil Company (New Jersey) in an announcement to 9 other oil companies involved in the plan. This decision was reached following an opinion from the Maritime Commission. The commission declared that the required steel, machinery and skilled workers necessary to carry out the plan are unavailable because of the current work being done in existent shipyards.

Last spring, following diversion of the first 50 tankers to the British shuttle service, the government consulted the major oil companies along the Atlantic Coast on means of making up the transportation deficiency created by this diversion. Because of lack of facilities for tanker construction in established yards at the time, the companies decided to finance construction of shipyards to build additional tankers. The companies concerned in this program were: Cities Service Oil Company, Consolidated Oil Corporation, Gulf Oil Corporation, Pan American Petroleum and Transport Company, Shell Oil Company, Socony-Vacuum Oil Company, The Atlantic Refining Company, The Texas Company, Tide Water Associated Oil Company, Sun Oil Company and Standard Oil Company (New Jersey).

The Maritime Commission placed orders several months ago for construction of 72 tankers, and is understood to have arranged more recently for construction of 64 additional tankers when ways are available.

Line Serving Fargo Pool Starts Operation

Bell-Western Pipe Line Company has placed in operation its 31-mile combination 4- and 6-inch crude line, extending from the Fargo pool, most northwesterly field in North Texas, to the Bell Oil & Gas Company's refinery at Grandfield, Oklahoma. Pool has 40 producers in Cisco, Canyon and Strawn zones, and has heretofore been dependent on trucks to the Grandfield plant for market outlet.

Logansport Gas Moving

Southern Production Company last week began running gas through its 20-inch 135-mile gas line from Logansport, Louisiana, to its trunk to the southeastern states at Monroe, Louisiana. About 35 million cubic feet will be handled daily for the present from Logansport.

California Production Plan Submitted to Ickes

A production control plan for the California oil industry has been approved by the Production Committee for District 5, Pacific Coast area. The plan was worked out by a subcommittee of the district production committee and received final approval of the full committee after nearly three weeks work. The program was formulated in response to recommendations of Harold L. Ickes, Petroleum Coordinator for National Defense. Discussions have been held with E. DeGolyer, conservation director under the coordinator, who visited Los Angeles to discuss conservation matters with the group.

E. E. Pyles, chairman of the District 5 Production Committee, stated that the plan's submission to the Coordinator's office was with the recommendation that it be approved. "Final approval or disapproval," he said, "will come from the coordinator under the method of operation of the office of the Petroleum Coordinator. Full details of the plan are to be made public when approved by Coordinator Harold L. Ickes.

Louisiana-Arkansas Division Annual Meeting October 24

Louisiana - Arkansas division, Mid-Continent Oil and Gas Association will hold its annual membership meeting for election of executive committee at Shreveport at 10 a.m. October 24. On the same day the executive committee will name the officers for the ensuing year.

The meeting, originally called for October 17, was postponed due to a Louisiana statewide oil hearing and Interstate Oil Compact Commission meeting on October 16-17.

De Mares Concession Producing Only Two Fields

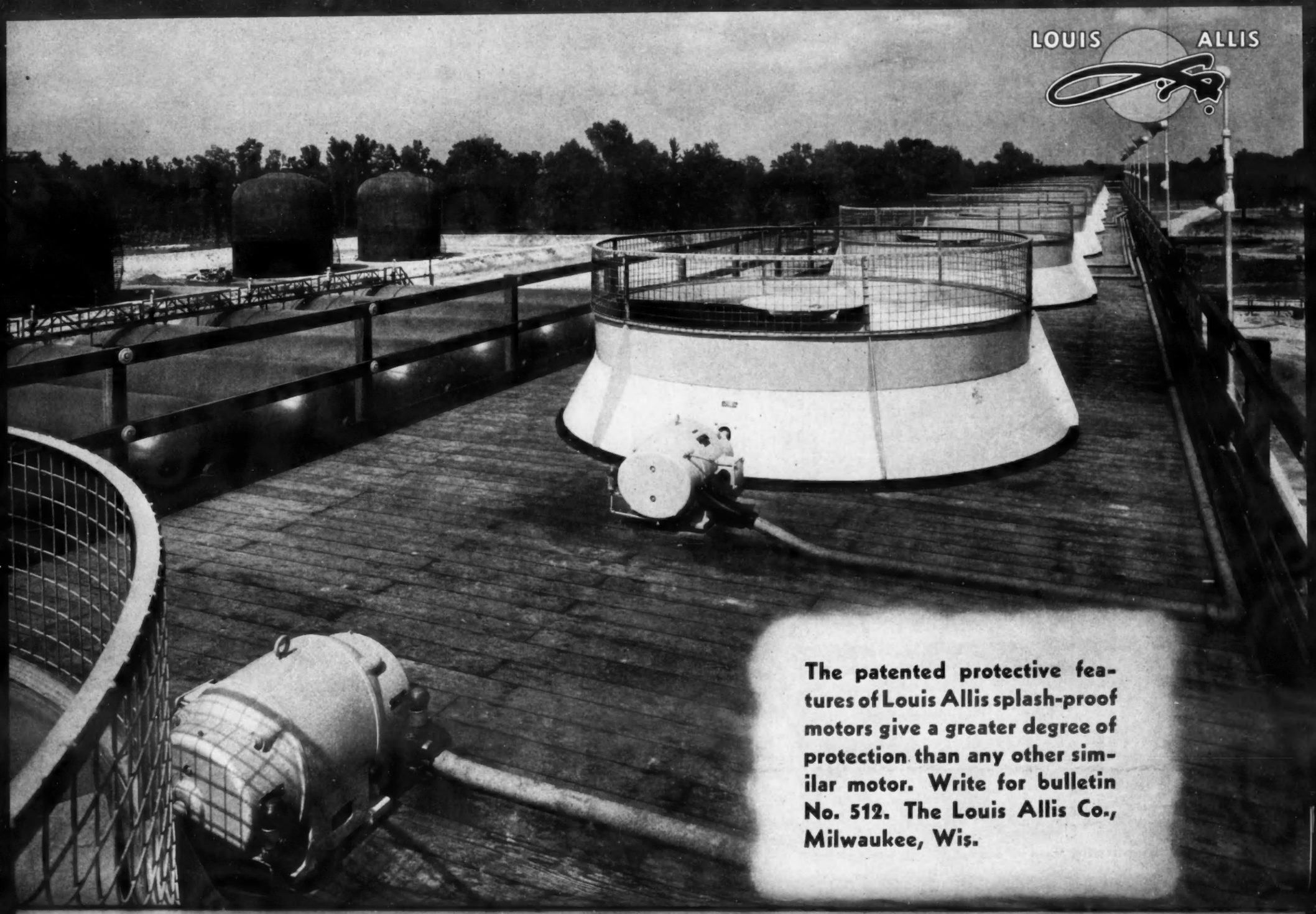
That productivity of Tropical Oil Company's De Mares concession in Colombia is limited to two fields, Infantas and La Cira, is indicated by latest well statistics. A total of 1128 wells had been drilled on the concession. Of these, 451 were in the Infantas field, 672 in La Cira, 1 in Mugrosa, 1 in Colorado and 3 in San Luis. In the Infantas field, 295 wells were reported on the pump and 3 were flowing. In the La Cira field, 460 were pumpers and 52 were flowing. La Cira and Infantas are the only fields producing. This year through June, daily production from La Cira and Infantas averaged 42,000 and 10,500 barrels respectively, which are rates slightly below those for 1940.

Testimony is being taken in the Colombian supreme court in the suit brought by the government to terminate the De Mares concession contract in June, 1946, despite the company's contention the contract runs until August, 1951. Dr. J. A. Uribe Prada, handwriting expert, recently certified the authenticity of the signatures on the various documents submitted in the case.

Mexican Congress Plans Government Oil Investigation

The Mexico City press reports that a special congressional committee is investigating alleged irregularities in foreign sales of oil by the government oil company, Petroleos Mexicanos, following charges made in congress by Congressman B. M. Nevares. Charges were specifically directed against deals with Cuban interests wherein Mexican oil was sold at such low prices that the transactions represented a loss.

In a public statement, several officials of Petroleos Mexicanos have denied all allegations of mismanagement, declaring that affairs of the company have been conducted in a "clean and businesslike manner."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Associations

IPAA-Stripper Well Men Gather October 20

Ralph K. Davies, deputy coordinator of petroleum for national defense, will be one of the principal speakers at the twelfth annual meeting of the Independent Petroleum Association of America at the Mayo Hotel, Tulsa, October 20, 21 and 22.

Monday will be given over by the association to meetings of the standing committees in which sessions they will formulate reports which will be presented Tuesday and Wednesday.

The National Stripper Well Association will hold its seventh annual meeting October 20. The two associations will come together at lunch. There will be three talks at this time. A garden party will be given Monday night at the Southern Hills Country Club for delegates under auspices of the Tulsa committee in charge.

First general sessions of the I.P.A.A. is scheduled Tuesday morning, October 21. At the luncheon Tuesday, speakers will be Congressman William P. Cole of Maryland and Frank Buttram, association president. Davies will speak at the annual banquet Tuesday night.

The luncheon Monday, sponsored by National Stripper Well Association, Oklahoma Stripper Well Association, and Independent Petroleum Association of America, will hear addresses by Wirt Franklin, director of production, Region 2, Chicago; Burdette Blue of Tulsa, and J. C. Watson, executive secretary, West-Central Texas Oil & Gas Association, Abilene.

Tuesday Morning

Independent Petroleum Association of America's opening business session will be Tuesday, October 21, at 9:30 a.m., with C. H. Lyons presiding, and the opening address by Frank Buttram, president of the association. Other matters to have attention at this session include:

Recognition of oil men and sons of oil men in military service.

Report of committee on credentials, rules and order of business, by J. B. Stoddard, chairman.

Report of refining and marketing practices committee, by Chas. F. Roeser, chairman.

Report of committee on segregation of earnings, by Chas. F. Roeser, chairman.

Report of committee on Interstate Oil Compact, by W. A. Moncrief, chairman.

Report of committee on constitution and bylaws, by John H. Kane, chairman.

Report of tax policy and advisory committee, by Merle Becker, chairman.

C. C. Herndon will preside at the luncheon Tuesday at 12:30, at which addresses will be made by Frank Buttram, and by Congressman William P. Cole.

Tuesday Afternoon

C. A. Johnson will preside at the general session Tuesday afternoon, the first order of business being the report of R. B. Brown, general counsel, to be followed by:

Report of H. B. Fell, executive vice president.

Report of committee on unnecessary and unprofitable drilling, by B. A. Hardey, chairman.

Report of committee on balance of supply with demand, by Lawrence Vander Leck.

Report of membership committee, by Ralph A. Johnston, chairman.

Report of public relations committee, by Burdette Blue, chairman.

Report of committee on wages-hours law, by Howard J. Whitehill, chairman.

The annual banquet will be held Tuesday evening at 7 o'clock, with Paul G. Blazer presiding, and the address of the evening by Ralph K. Davies.

Wednesday

The general session Wednesday morning will convene at 9:30 o'clock, with H. B. Fell presiding, and will hear report of Van S. Welch, chairman of the nominating committee, and of Ralph T. Zook, chairman of the resolutions committee.

The board of directors will meet at luncheon at 12:30, Frank Buttram, president, presiding, and will hear an address by W. G. Skelly.

Business of the afternoon session Wednesday will include report of the budget and finance committee, and a meeting of the executive committee.

Visiting ladies will be entertained Wednesday at the Tulsa club, a play review at 11 o'clock being followed by luncheon.

Stripper Well Meeting

Following is the tentative program of the seventh annual meeting of the National Stripper Well Association, at 9 a.m., Monday, October 20, with H. B. Fell, executive vice president, presiding:

President's annual message, by C. P. McGaha.

Report of the treasurer, by Howard J. Whitehill.

Oklahoma Stripper Well Association business session.

Meeting of committees of National Stripper Well Association.

A luncheon at 12:15, sponsored by National Stripper Well Association, the Oklahoma Stripper Well Association, and the Independent Petroleum Association of America, will hear addresses by W. A. Goforth, president, Oklahoma Stripper Well Association; C. P. McGaha, president, National Stripper Well Association; "Our Rights and Duties Under Temporary Federal Control," by Burdette Blue; Wirt Franklin, district director of production, Region 2, and J. C. Watson, executive vice president, West-Central Texas Oil & Gas Association, Abilene, Texas.

Continuation of the business session at 2:30 will include report of committee on credentials, rules and order of business, by D. H. Bolin, chairman.

Report of constitution and bylaws committee, by W. A. Keffer, chairman.

Report of nominating committee, by J. D. Sandefer, Jr., chairman.

Report of resolutions committee, by H. M. McClure, chairman.

Pacific Coast Geologists Announce Annual Program

Eighteenth annual meeting of the Pacific Section of the American Association of Petroleum Geologists will be held at the Ambassador Hotel, Los Angeles, October 16 and 17. On October 16, the Pacific Section of the Society of Paleontologists and Mineralogists will also hold its annual meeting at the Clark Hotel. The two meetings have been held concurrently for a number of years.

Fifteen technical papers are to be presented before the geological sessions at morning and afternoon sessions during the two days. The meeting will be opened with an address by Edgar W. Owen, national president of the association.

Papers to be presented during the meeting include:

"An Introduction to the Cretaceous of California," by Olaf P. Jenkins, State Geologist of California. "The Standard of the Cretaceous System," by Siemon W. Muller and Hubert G. Schenck, Stanford University. "The Cretaceous Vertebrate Record of California," by Chester Stock, California Institute of Technology.

"The Franciscan Knoxville Problem," and "Cretaceous of the Santa Lucia Range," by N. L. Taliaferro, University of California. "Cretaceous—West Side Sacramento Valley North of Willows," by Philip W. Reinhart, Shell Oil Company. "Upper Cretaceous Stratigraphy of the West Side of Sacramento Valley South of Willows, Glenn County, California," by James M. Kirby, Standard Oil Company of California.

"Cretaceous — East Side Sacramento Valley," by W. P. Poponoe, California Institute of Technology. "A Discussion of Part of the Upper Cretaceous Along the West Border of the San Joaquin Valley," by A. S. Huey and J. W. Daly, Shell Oil Company.

"Geology of the Del Valle Area," L. A. Tarbet, Standard Oil Company of California. "Geologic Notes on the Oak Canyon Oil Field," by Wayne Loel, R. W. Clark, and Paul P. Goudkoff. "Oil Fields—Before Discovery and After Development," James C. Kimble, General Petroleum Corporation. "The Relationship Between Some Types of Gravity Anomalies and Structure," by Robert H. Miller, Western Gulf Oil Company.

"Some Drilling — Time Logs and Their Uses," and "Northwest Extension of the Inglewood Field," by Robin Willis, Hilldon Oil Company. "Crocker Flat Infolded Landslide and Coarse Clastics in the Temblor Range, California," by Russell R. Simonson and Max L. Krueger, Union Oil Company of California. "Radioactivity Well Logging Through Casing," by Lowell C. Beers, Lane-Wells Company.

Officers of the Pacific Section of the AAPG include E. W. Galliher, president; E. J. Bartosh, secretary-treasurer; Albert Gregersen, past president; Frank Hudson, past president; and E. C. Edwards, R. G. Reese, Gregersen and W. D. Kleinpell, district representatives. Program committee for the eighteenth annual meeting is headed by Mason L. Hill; arrangements committee by Max L. Krueger.

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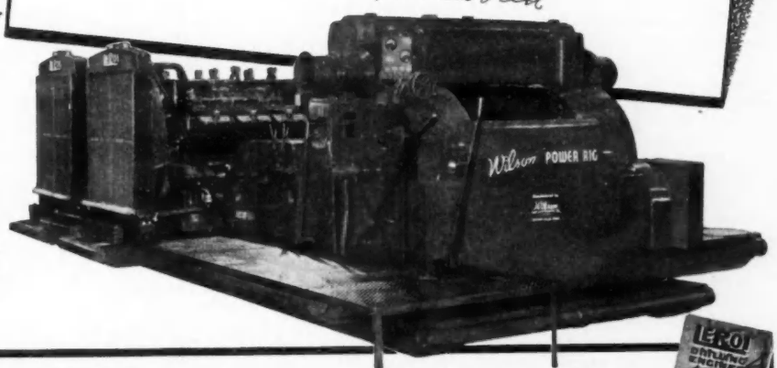

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Texas Association Concerned Over Future of Control

THE greatest worry of the petroleum industry as well as all business is whether American democracy and the free-enterprise system will survive after termination of the present national-defense emergency. At least this subject was the keynote of the Texas Mid-Continent Oil & Gas Association convention at Beaumont last week, not only being debated in the corridors and private gatherings, but by practically every platform speaker that appeared before the meeting. Thus members of the industry put aside their own more local problems to study and debate those of a broader and more general nature.

Democracy Faces Dilemma

"American democracy today is facing the most crucial dilemma of its entire experience; on the battle fields it is aiding in a mighty struggle against totalitarianism, and at home it is fighting destructive forces that corrode and sap its strength." These are words delivered by George C. Hester, professor of government at Southwestern University, before the association meeting, who stressed that "in the long run, it is that fight against internal dangers and tendencies that may ultimately decide the fate of the democratic experiment."

Democratic government is under pressure today, but the real testing time is yet to come, Hester said in venturing to prophesy "that the most trying and difficult period of self-government is rapidly approaching this country, one that will test the civic capacity of all citizens and all groups, if we are to direct and perfect our political system under the increasingly complex and difficult art of self-government." The challenge before all of us today, he continued, is that "sustained, intelligent and constructive efforts in public affairs must become a vital part of every man's business.

"Before us today are two roads, a parting of the way it may be for us Americans. One of them is paved with loose fiscal policies and the wasting of the very substance of democracy, accompanied by ever looming spectors of devaluation in spite of blighting taxation, the withering of all private enterprise and initiative, and eventually—bankruptcy, regimentation and stagnation. We all know what that way is. It is plainly marked by the wrecks of other democracies. It is the line of least resistance now, marked by spineless politics and by apathy and indifference on the part of our people. It is that road we must not take."

We must plan now, the speaker stated, for that day when peace comes to the world, when we will be faced with the "task of again gearing production to a peace-time economy, the shift of millions of men into new employment, the opening up of new markets and the stabilization of monetary systems, together with the reconstruction of much of the world that will be prostrate from the ravages of war." Continuing, Hester declared that "every business, with all the technical skill at its command, should be probing the possibilities and planning its course. Governments should be planning for that task. Municipal, county, and state officials, instead of racing to Washington or to state capitals for handouts, should be planning a competent, intelligent, and efficient administration of the public affairs entrusted to them.

"Of all the great domestic difficulties confronting us in the future," Hester predicted that "the most difficult, the most obstinate and perhaps the most dangerous will be that of public finance. "Here again," he said, "the chief difficulty is the fact that we refuse to face realities. We borrow and borrow, instead of paying and paying. We cater to every group that has cooked up some scheme to raid the public treasury instead of saying, 'No' and meaning it. ... Under the present course of events, some sort of prodigious crash is ahead of us in public finance.

"Above all things, this country today needs some hard-boiled credit and fiscal policies. And the problem is one that won't wait very long. . . . Peacetime economies just won't operate under such a burden."

In urging a definite, constructive, sustained and far-reaching domestic program, Hester advocated that it be along the following general lines:

1. Stop throwing away public money for unnecessary projects and handouts.
2. Cut non-defense expenditure to the bone.
3. Modernize and streamline the obsolete state and local governments to the end that business methods and efficiency can be applied. This, he held, is the most fertile field for the taxpayers' interest in government today.

Uncertainty Greatest Trouble

"Uncertainty seems to be our greatest trouble right now," in the opinion of Jerry Sadler, member of the Texas Railroad Commission and another of the convention speakers.

Oil men, he stated, want to know how far federal control is going, how long it will last and many other questions relative to priorities, steel shortage, tanker diversions, etc.

These and a "hundred other questions are not unreasonable questions, and I think," Sadler continued, that "the asking of them would be no undue criticism of national policy. If they cannot be answered, let us know that. If they can be answered, there are hundreds of Texas oil men willing and anxious to do their part in the national-defense program, eager to hear the answers."

The ultimate objective of state control is conservation, but what is the objective of federal control? Sadler asked. In attempting to answer his own question, he expressed the thought that the objectives of federal governments in his opinion "should be the coordination of all branches of the oil industry, in all states, to the end that there shall be no lack of a vital raw material in a

Ask Priorities for Oil Equipment

A resolution that Petroleum Coordinator Ickes immediately request and insist that the Office of Production Management promptly grant priority ratings calculated to make immediately available the necessary materials and supplies for the oil industry to continue its operations vital to national defense efforts, was passed by the board of directors of Texas Mid-Continent Oil & Gas Association. The resolution was telegraphed to Coordinator Ickes.

The board of directors also adopted a resolution endorsing the Interstate Oil Compact.

Full text of the priority resolution follows:

"Whereas on September 27, 1941, there was presented by your office, supported by ample evidence from the oil industry and likewise by the petroleum equipment industry and trade, a comprehensive request to the Office of Production Management for essential priorities for raw materials, equipment and supplies for the oil industry in respect to the maintenance of oil production, refining, transportation, the continuance of wildcatting and the development of proven areas, etc.

"Whereas, the maintenance of present production of oil and petroleum products and the normal discovery of future reserves are necessary and essential to the national-defense effort and cannot be effected without adequate supplies, equipment, and material.

"Whereas, such request has not been acted upon by the Office of Production Management, and whereas the situation is daily likewise more serious and acute.

"Now, therefore be it resolved by Texas Mid-Continent Oil and Gas Association, in annual convention assembled at Beaumont, Texas, that the Office of Petroleum Coordinator for the National Defense be requested and urged to immediately request and insist that the Office of Production Management set upon such presentation of the needs of the oil industry and to promptly grant ratings necessary and appropriate and calculated to make immediately available the necessary materials and supplies for the national-defense effort of the oil industry."

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George Sawtelle Elected President of Texas Mid-Continent Oil & Gas Association

GEORGE SAWTELLE

GEORGE SAWTELLE, president of Kirby Petroleum Company, Houston, was elected president of the Texas Mid-Continent Oil & Gas Association at its annual meeting last week.

Sawtelle's association with oil dates back to his school days when he worked in various fields during vacations. After graduating from Marietta Academy, he attended Lehigh University, specializing in chemistry and geology. Following graduation, he obtained a commission as a captain in the regular army, and commanded the Seventh trench mortar battery in France. After the war he served as football and baseball coach at Northwestern University, until resigning to go with Kirby Petroleum Company 20 years ago.

The following were elected vice presidents: J. Cooke Wilson, B. G. Byars, J. L. Collins, Charles J. Tucker, B. L. LaFevere, A. E. Mermann, W. J. Rhodes and Al Buchanan.

The following were added to the board of directors: George Parker, O. S. Petty, Fred W. Shield, Dale Dorn, Harold Wilson, A. B. Judd and J. C. Hunter, Jr.

George C. Gibbons, Dallas, was reelected executive vice president, and Eugene McElvaney, Dallas, was again named treasurer.

time of grave national emergency." Sadler then repeated the words, "In a time of grave national emergency."

Sadler stated no one could quarrel with that objective, but added, "when this emergency has passed, I consider that the State of Texas is capable of minding its own business." He concluded his remarks with these words: "While we are preserving the national government, let us not forget that we must also preserve and maintain the governments of the states. Unless we preserve the state—we lose—the United States."

In the president's address, read by his son, E. L. Smith, Jr., the achievements of the association during the past year were reviewed, and a strong warning was expressed that in trying to save the nation's democracy it could easily be lost. President Smith was unable to attend the meeting due to illness.

"It is the definite understanding of every man in our industry," Smith stated, "that government control is only for the duration of the national emergency, and when that is over we can again manage our own business as a free enterprise in the manner of honest American businessmen." After pointing out that so far federal coordination of oil had proceeded in a democratic way. He expressed himself as believing that there is no "thought or intention on the part of government at this time to force a permanency of control by government after the emergency is reasonably over. . . . But, may I remind you, that in trying to save democracy it can so easily be lost. Past history in our government shows that when temporary bureaus have been set up for special purposes, many have become permanent. We must be alive, likewise, to danger signals which stand out in the history of other nations, whose way of living we are opposing today. When government permanently controls business, then it becomes in effect a dictator nation—free enterprise and opportunity are destroyed. . . . A bureaucratic government can be equally dangerous to American ideals. Bureaus with huge employment yielding strong political influence become firmly entrenched and can be dislodged and eliminated only by the most determined effort. . . . Then to preserve our industry we must keep our organizations strong and vital forces."

Another warning issued by Smith was relative to increased taxes. "It is high time to stop these tax increases in our state and local governments, not only on our oil business but on every other kind of business." We must "develop some good old-fashioned economy of government at home, while we are having to sacrifice for the national good. We have been recently told by Secretary Morgenthau that the new federal tax bill is just the beginning. Our only hope of meeting the situation is through radical tax economies at home."

Smith lauded passage of a permanent conservation law in Texas, stating "congressional committees looked with distrust toward the two-year law." The permanent Texas law "has been a wholesome movement not only for Texas but as an example for other states."

The desirability of the industry making itself heard was stressed by Ralph K. Davies, deputy petroleum coordinator, in which he discussed some of the problems facing the industry.

"This is a period of change, with new and special demands," Davies stated. "It is also a period during which the future course of our economic life is being determined. If you would have a hand, not only in your present but in shaping your future, be alert, active and articulate. Watch closely the developments of the day and participate in them. When attacks are made upon your industry, either directly or indirectly, recognize them for what they are and express yourself in voice that will carry. Recognize that ulterior motives not infrequently prompt attacks, that issues are many times confused for a purpose, that personalities are introduced to incite unreasonable prejudices and so prevent objective examination. In short, be on your guard, be prepared to fight for what you consider right and worthwhile—do not let your interests go by default."

Davies emphatically denied that the Petroleum Coordinator's Office had ever discouraged free expression on the part of its industry committee, declaring that the contrary was true. "We think it is desirable and in the interest of both the industry and the public that there should be some orderly procedure and some means of avoiding the confusion that must result from the dissemination of fragments instead of full facts. We want order, but we want no secrecy."

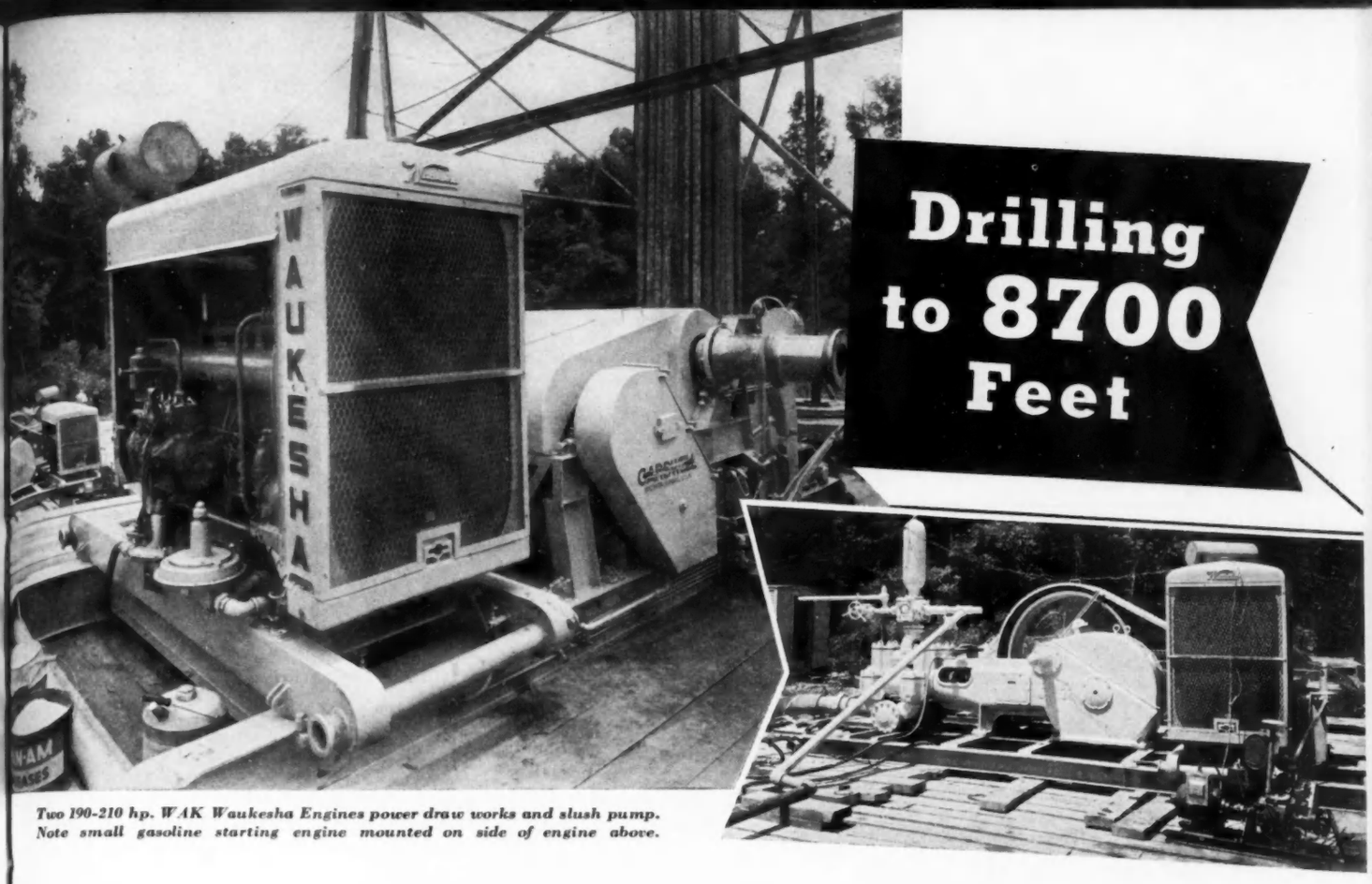
Every oil man should understand that the industry committees that have been appointed by the coordinator are "his committees, and that everyone in the industry, from the smallest operator to the largest company, is unquestionably entitled at all times to take his problems, his opinions, his suggestions, and his questions to these district committees," Davies explained. "Also," he continued, "every oil man should understand that the field staffs of the coordinator's office were organized to serve him."

Turning to the subject of steel priorities, Davies said that while the task of handling priority applications involved a vast amount of exacting detail, that the work has been so organized all requests could now be handled with a minimum of delay. However, he pointed out, that while "we can decide fairly promptly the relative urgency of materials and equipment so far as the oil industry itself is concerned . . . after that, the applicaitons must be weighed by the Office of Production Management with consideration of the requirements of all industries needing steel. In short, OPM must decide the question of the relative importance of competing demands of each industry. You could hardly comprehend the enormity of the labor entailed in this work unless you, yourself, were to see it. Worse, I do not see that this work will lessen; on the contrary, it will almost inevitably increase."

It was indicated by Lord Marley, deputy speaker of the British House of Lords, and one of the convention speakers, that Britain may have built up a sufficient supply of petroleum products to be in a position to return some of the diverted tankers to the United States at this time.

In explaining the English tanker situ-

STEEL TAPES



Two 190-210 hp. WAK Waukesha Engines power draw works and slush pump. Note small gasoline starting engine mounted on side of engine above.

Drilling to 8700 Feet

WAUKESHA ENGINES

...power the drilling rig... the mud pump ...and the generator

They're drilling them deep in Louisiana—going down to 8700 feet in this well. A 190-210 hp. Model WAK Waukesha Engine powers the Cardwell Model T draw works, and another Waukesha of the same model and size is driving the Gumbo Buster G-14 slush pump. And they're using their own product—natural gas—for fueling both of these Waukesha Engines. That means they're getting not only dependable power but economical power.

Light for the rig and other electrical current needs are supplied by a general utility generator. It is powered by the small, two-cylinder, air-cooled, 8 hp. Model 150 Waukesha Power Unit seen in the right foreground of the smaller illustration.

There is a Waukesha Engine for every oil field need —10 hp. to 350 hp., gasoline or gas—30 hp. to 325 hp., diesel fuels. *Get Bulletin 1079*—it includes a complete, easy-to-use list of every Waukesha Power Unit with ratings, speed, torque, horsepower and size.

WAUKESHA MOTOR COMPANY, WAUKESHA, WIS.
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WAUKESHA *Oil Field* ENGINES

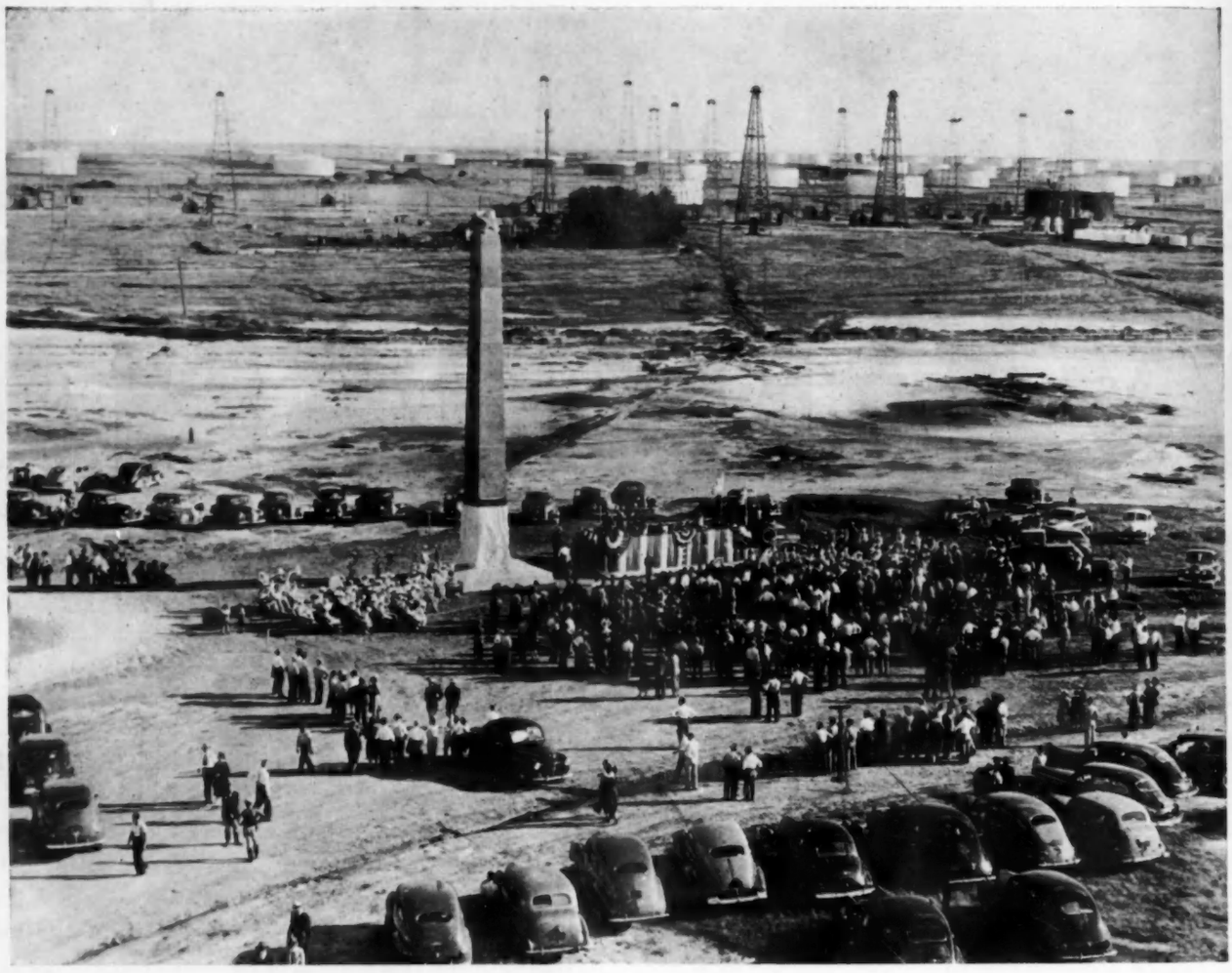
ation, Marley stated the number of tankers available to Britain had been over-estimated. England, he reported, had about 500 tankers of its own which were increased to about 900 by additions of boats from Norway, Belgium and Holland. However, he stated that many of these were small vessels not usable on the ocean. In all, he stated, England never had over 700 ocean-going tankers. This number was materially reduced by sinkings, and a large number were always laid up for repairs, consequently Britain found herself in a position in which she was short of tankers. In this connection, he continued, it must be remembered that while 250 tankers normally would be adequate for England's war requirements, that due to the necessity of using ports not properly equipped, the use of longer routes because of submarine dangers, increased numbers laid up for repairs, and greater consumption needs, Great Britain needed many more tankers. This was especially true when it was decided that it was advisable to stock up against possible invasion attempts, as well as preparing for fighting in Africa and the Near East. Because of this situation it was necessary to obtain the assistance of the United States in augmenting the tanker fleet.

"It has always been understood that these tankers would be returned as soon as they had fulfilled their duties," Marley asserted.

It was emphatically denied by Marley that the English were using tankers for purposes other than hauling petroleum. The only exception he knew about was a year ago, when because of desperate circumstances five tankers carried grain on one trip.

Also he denied that Britain was selling oil-field equipment in South America during the war, unless orders previously had been placed. "It couldn't happen under the lend-lease act, without consent of the United States government," he explained.

Memorial to Lucas Gusher Dedicated at Beaumont Ceremony



DEDICATION of this nearly 55-foot granite monument on the site of the famous Lucas gusher that discovered the Spindletop oil field on January 10, 1901, was one of the highlights of the Texas Mid-Continent Oil & Gas Association meeting.

This great well was heralded by E. DeGolyer and George A. Hill, speakers at the dedication ceremonies, as not only being responsible for the development of the oil industry from its small unimportant size prior to that time, but for the beginning of a new era for civilization. In the words of George Hill, "the discovery of the Lucas Gusher and the development of Spindletop constituted an initial and continuing force of such magnitude in the exploitation of oil in this country and throughout the world that eminent historians and economists have solemnly proclaimed that 'the exploitation of oil has brought about in the Twentieth Century a rvolution quite as great in its consequences as the industrial revolution of the Nineteenth Century.'"

It was particularly interesting that such an epoch affair as the dedication of a monument 40 years after the event that prompted it had occurred, was attended by the three Hamill brothers (J. G., A. W., and Curt) who were drillers on the famous Lucas gusher.

41 YEARS AGO...

S. M. JONES OPENED FIRST OIL WELL SUPPLY STORE IN BEAUMONT, TEXAS

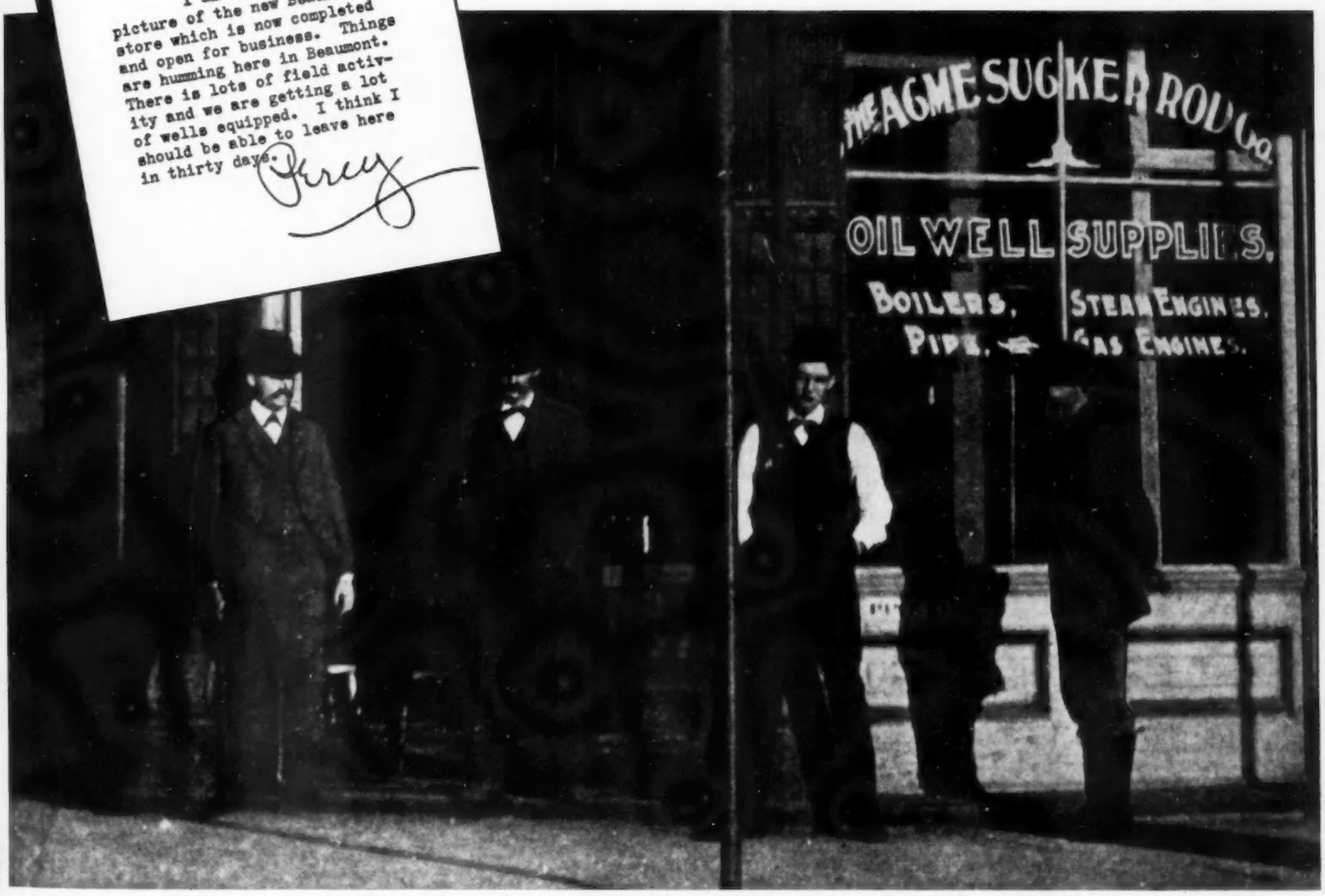
THE ACME SUCKER ROD CO.
UP-TO-DATE
OIL WELL APPLIANCES.
TOLEDO, OHIO.

Beaumont, Texas
Feb. 1, 1900

Dear Dad:

I am enclosing a picture of the new Beaumont store which is now completed and open for business. Things are humming here in Beaumont. There is lots of field activity and we are getting a lot of wells equipped. I think I should be able to leave here in thirty days.

Percy



Picture of first supply store in Beaumont, Manager Percy Jones in shirt sleeves

History was in the making when this letter was written and this picture was taken. Spindletop was then the world's greatest oil field, and S. M. Jones sucker rods were an important development in the oil industry.

S. M. Jones, who opened the first oil well supply store in the entire Mid-Continent area at Corsicana, Texas, in 1898, also opened the first supply store in Beaumont. For the Acme Sucker Rod Co. of the "late nineties" is the S. M. Jones Company of today. Then we were "general merchants" in the supply business. Today, as for many years past, we specialize in the design, manufacture and service of sucker rods.

Forty-one years after young Percy Jones wrote the above letter to his father, Jones Sucker Rods are still getting the job done on wells of all depths, in many fields and under all conditions. Yes, it's an established fact that there is still no lifting device on the market today that compares in economy, simplicity, and flexibility with beam pumping.

The S. M. JONES Co.

JoneSuckeRods

The S. M. Jones Company, General Office and Factory, Toledo, Ohio
General Sales Office, 518 McBirney Bldg., Tulsa, Okla. Export Office, 19 Rector Street, New York City

Refinery Runs Near Peak; Markets Being Supplied

For the United States as a whole and for the East Coast, supplies of oil were provided for consumers in sufficiently large quantities during the week ended October 4 to minimize the threat of serious scarcity.

Refineries of the nation continued to process near-record quantities of crude oil, and despite the unprecedented market requirements for petroleum products, the plants kept abreast of the demands imposed upon them, having produced enough heavy fuel oil to permit the storing of 750,000 barrels within the week in addition to satisfying current needs, although there were withdrawals meanwhile of 400,000 barrels of heating oil and about 125,000 barrels of gasoline.

Significantly, however, the draft on stocks of heating oil was not on the East Coast, where it might have been expected, but largely on the Texas Gulf Coast, as supplies moved in large volume from that area eastward. Similarly, there was nothing alarming about the reaction of gasoline stocks on the East Coast, a withdrawal of 293,000 barrels for the week having been much smaller than that of 956,000 barrels for the corresponding week last year.

Moreover, the East Coast shared materially in the national build-up of heavy fuel oil stocks for the week, inventories of the district having been enlarged 327,000 barrels, against an addition of only 18,000 barrels in the corresponding week last year.

Stocks of gas oil and distillate fuel, consisting largely of heating oil, totaled 49,553,000 barrels for the nation on October 4, compared with 48,848,000 barrels a year previously. On the East Coast, the inventory amounted to 18,803,000 barrels, or almost a million barrels more than the 17,918,000 barrels in storage at the corresponding time last year. Since the end of June this year, the East Coast storage has been increased 9,382,000 barrels, compared with a build-up of only 7,517,000 barrels in the like period last year.

Light fuel oil stocks on the Texas Gulf Coast were reduced 707,000 barrels in the week of October 4, whereas they were increased 844,000 barrels in the corresponding week last year. Present stocks of 5,620,000 barrels compare with 8,539,000 a year ago. And whereas there has been a reduction of 1,741,000 barrels since the end of June, there occurred in the like period last year an addition of 3,924,000 barrels.

Stocks of gas oil and distillate fuel are virtually the same now as a year ago in the Appalachian region, the Illinois-Indiana-Kentucky area, North Louisiana-Arkansas, and the Rocky Mountain district. In California they are 2,500,000 barrels larger and in Oklahoma-Kansas-Missouri 500,000 barrels up. Smaller increases are shown for Inland Texas and the Louisiana Gulf Coast.

Gasoline Stocks

East Coast stocks of gasoline totaled 18,579,000 barrels October 4, compared with 19,848,000 barrels a year earlier, and Appalachian storage amounted to 3,337,000 barrels against 3,375,000. Coastal Texas stocks were off over 1,500,000 barrels from a year previously at 11,515,000 on October 4, and North Louisiana-Arkansas showed an 85,000-barrel decrease for the year, while California storage was down materially to 14,124,000 from 15,466,000. Indiana-Illinois-Kentucky stocks of 14,591,000 barrels were somewhat greater than those of 13,913,000 a year before, and Oklahoma-Kansas-Missouri showed an increase to 6,918,000 from 6,181,000, while Inland Texas was up to 2,181,000 from 1,478,000, the Louisiana Gulf Coast to 2,824,000 from 2,507,000, and the Rocky Mountain states to 1,007,000 from 913,000.

October 4 stocks of residual fuel oil on the East Coast totaled 10,482,000 barrels, compared with 12,830,000 a year before, and Appalachian storage was off to 496,000 from 574,000. Decreases as compared with a year ago were shown also for Oklahoma-Kansas-Missouri, Inland Texas, North Louisiana-Arkansas, and the Rocky Mountains, although California accounted for the bulk of the national reduction of stocks, having had on hand October 4 only 64,039,000 barrels, in contrast with 74,952,000 a year previously, an 11,000,000 barrel reduction. Areas that have more heavy fuel in storage than at this time last year include Indiana-Illinois-Kentucky, up from 3,393,000 to 4,513,000 barrels; the Texas Gulf Coast, up from 7,608,000 to 8,613,000, and the Louisiana Gulf Coast, up from 1,834,000 to 2,141,000 barrels.

Having charged to stills 4,015,000 barrels of crude daily in the week ended October 4, refineries of the nation were consuming 35,000 barrels a day more of the raw material than in the previous week and were operating at 93.3 percent of capacity, against 92.5 percent the week before.

East Coast plants further stepped up their runs, having processed 640,000 barrels daily, which was 95.1 percent of rated capacity, whereas in the previous week, runs averaged 616,000 barrels daily, or 91.5 percent of capacity. These figures indicated that no difficulty was encountered in obtaining adequate crude.

In the Appalachian region, runs were maintained at 97.1 percent of capacity and in the Indiana-Illinois-Kentucky area at 103.0 percent of rated capacity. In other districts, runs were as follows: at 94.6 percent of capacity in Oklahoma-Kansas-Missouri, 88.6 percent in Inland Texas, 92.3 percent on the Texas Gulf Coast, 117.6 percent on the Louisiana Gulf Coast, 123.4 percent in North Louisiana and Arkansas, 95.6 percent in the Rocky Mountains, and 75.7 percent in California.

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
August 5	[2]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[1]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
October 7	3,435,850	3,505,000	231,564,000	[3]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[3]229,127,000	72,122,000	39,358,000	115,060,000
1940:			[6]			
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[2]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 31	3,501,350	3,575,000	265,865,000	85,393,000	44,766,000	108,774,000
September 28	3,799,950	3,600,000	263,609,000	82,273,000	47,986,000	108,450,000
October 26	3,640,300	3,565,000	262,746,000	80,891,000	[4]48,893,000	108,475,000
November 9	3,584,200	3,510,000	261,631,000	[3]79,847,000	48,408,000	107,687,000
November 30	3,335,050	3,510,000	262,679,000	80,284,000	46,212,000	106,618,000
December 28	3,385,500	3,585,000	261,552,000	83,274,000	42,266,000	102,620,000
1941:						
January 25	3,599,100	3,625,000	260,093,000	88,762,000	39,039,000	100,297,000
February 22	3,629,650	3,590,000	261,783,000	95,812,000	34,381,000	98,631,0000
March 29	3,746,550	3,625,000	266,187,000	[2]99,727,000	29,949,000	96,152,000
April 26	3,726,850	3,675,000	266,149,000	96,647,000	29,543,000	94,732,000
May 31	3,786,100	3,699,000	262,356,000	93,845,000	33,524,000	92,757,000
June 28	3,847,250	3,930,000	259,399,000	91,461,000	35,732,000	92,896,000
July 12	3,870,750	[1]4,090,000	255,567,000	89,561,000	37,812,000	92,699,000
August 2	3,695,250	3,845,000	252,535,000	86,779,000	41,433,000	94,800,000
August 30	4,004,700	4,070,000	249,413,000	81,672,000	45,351,000	95,052,000
Sept. 6	3,814,950	3,995,000	247,528,000	81,571,000	46,127,000	95,125,000
Sept. 13	4,033,700	4,010,000	246,164,000	80,555,000	47,271,000	95,753,000
Sept. 20	[1]4,074,200	3,995,000	246,500,000	80,199,000	48,907,000	95,005,000
Sept 27	4,060,000	3,980,000	246,649,000	81,003,000	49,950,000	95,251,000
October 4, 1941	3,860,750	4,015,000	.....	80,870,000	49,553,000	96,016,000
October 4, 1940	3,488,800	[8]3,565,000	[4]263,609,000	81,644,000	48,848,000	107,461,000
Change in past year.	+10.7%	+12.6%	—6.4%	—0.9%	+1.4%	—10.6%

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks Sept. 28, 1940
[5] Lowest since October, 1922, due to shut down of six Mid-Continent states. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] September-October, 1940, daily average.

Market Strong as Crude Advance Is Anticipated

Speculation over the prospects of a Mid-Continent crude raise largely dominated the market scene during the past week, and refined products as well as crude continued remarkably strong.

Encouraged by indications that the price control authorities at Washington would approve reinstatement of a rescinded 23-cent increase in Pennsylvania grade crude prices, producers of the Southwest intensified their agitation for an advance in postings in that region.

Gulf Coast refiners were so convinced that a crude price raise was in store, that they were protecting themselves on gasoline orders booked for future deliveries by specifying as much as a ¼ cent a gallon addition to the gasoline price for each 5 cents increase in the price of crude. Rumors indicated expectations that postings might be increased as early as October 11.

As indicated in an article beginning on page 14 of this issue, the markets for crude are exceptionally strong in practically all districts of the United States, an exception being California, where the market is adversely affected by loss of export business and inadequacy of tankers for taking full advantage of potential demand in the Northwest.

Especially strong are the crude markets in Illinois, Oklahoma, Kansas, and East Texas, where current production falls short of firm demand.

Unable to increase purchases in East Texas, several major purchasers, ac-

Wholesale Prices of Refined Products in Principal Markets

	Range Last Week (Cents a gal.)		Changes from Week Before	
REFINED GASOLINE				
Oklahoma Refineries:				
60 Octane and Under	5⅛	5⅝	...	...
63-66 Octane	5⅝	6	...	...
72-74 Octane	6	6⅜	...	...
80-82 Octane, Ethyl	6¾	7¼	...	...
Mid-Western Tank Car:				
60 Octane and Under	5⅛	5⅝	...	...
63-66 Octane	5⅝	6	...	...
72-74 Octane	6	6⅜	...	...
80-82 Octane, Ethyl	7⅜	7⅞	...	...
New York Harbor:				
68-70 Octane	8	8	...	...
72-74 Octane	8	8½	...	...
Min. 80 Octane, '39 Research	8½	9	...	...
Gulf Coast:				
60 Octane unleaded	5½	5¾	...	...
65 Octane unleaded	5¾	6	...	...
68 Octane unleaded	6¼	6⅜	...	...
70 Octane unleaded	6¼	6⅝	...	...
72-74 Octane leaded	6¼	6⅝	...	...
Min. 80 Octane, '39 Research	6½	6¾	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	4⅞	4⅞	±⅛	±⅛
F.O.B. Br'kenr'ge, Tex.	4½	4½	±⅛	±⅛
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4¾	4¾	...	...
42-44 water white	4½	4⅞	...	...
Mid-Western Tank Car:				
41-43 water white	4¾	4¾	...	...
42-44 water white	4½	4⅞	...	...
New York Harbor	5¾	5¾	...	...
RANGE OIL				
At Oklahoma Refineries	4	4⅜	...	...
In Mid-Western Market Group 3, basis	4	4¼	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3½	4¼	...	...
No. 3	3½	3⅝	+⅛	...
Mid-Western Tank Car:				
No. 1 white	3⅞	4¼	...	...
No. 3	3½	3⅝	+⅛	+⅛
New York Harbor:				
No. 1	5¾	5¾	...	...
No. 3	5¼	5¼	...	...

	Range Last Week (Per Bbl.)		Changes from Week Before	
HEAVY FUELS				
Oklahoma Refineries:				
No. 6	$0.80	$0.90	...	...
Mid-Western Tank Car:				
No. 5	.85	.85	...	...
No. 6	.85	.87½	...	...
New York Harbor:				
No. 5	1.65	1.75	...	...
No. 6	1.35	1.50	...	...
BUNKER C FUEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$0.85	$ .95	...	...
New York Harbor	1.35	1.50	...	...
DIESEL OIL (Per barrel, ships' bunkers)				
Gulf Coast	$1.55	$1.55	...	...
New York Harbor	2.15	2.15	...	...
LUBRICATING OIL (Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210° 10-25 pour test	22½	23	...	...
Neutral oil pale No. 3 Color, 150 viscosity at 100°, 0-10 pour test	14½	14½	...	...
Western Pennsylvania:				
Bright Stock, 145-155 viscosity at 210°, 25 pour test	25	27½	...	—½
Neutral Oil No. 8 Color, 150 viscosity at 70°, 25 pour test.	31	31	...	...

United States Crude Oil Production Up Sharply; Illinois Down

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (Oct.)	State Allowable (Barrels Daily in Oct.)	BARRELS DAILY FOR WEEK ENDED Oct. 4	Oct. 11
TEXAS:				
Texas Panhandle	.....	.....	72,200	84,500
North Texas	.....	.....	100,800	104,200
West Central Texas	.....	.....	30,500	30,700
West Texas	.....	.....	232,100	280,300
East Central Texas	.....	.....	80,000	83,800
East Texas Field	.....	.....	298,500	370,400
South Texas	.....	.....	180,300	217,900
Texas Gulf Coast	.....	.....	249,500	292,600
Total Texas	1,420,100	1,433,957‡	1,243,900	1,464,400
CALIFORNIA:				
Long Beach	.....	.....	38,400	38,700
Midway-Sunset	.....	.....	41,500	55,400
Kettleman Hills	.....	.....	36,400	38,200
Wilmington	.....	.....	86,500	88,200
Others	.....	.....	430,900	442,000
Total California	613,200	613,200*	633,700	662,400
OKLAHOMA:				
Oklahoma City	.....	.....	432,500	88,700
Seminole Area	.....	.....	109,850	110,950
Others	.....	.....	229,600	228,450
Total Oklahoma	481,500	428,000	432,500	428,100
ILLINOIS:				
Salem	.....	.....	78,700	78,300
Louden	.....	.....	59,600	58,000
Centralia	.....	.....	9,050	9,000
Other New Pools	.....	.....	273,450	248,850
Old Pools	.....	.....	12,850	12,150
Total Illinois	399,200	.....	433,650	406,300

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (Oct.)	State Allowable (Barrels Daily in Oct.)	BARRELS DAILY FOR WEEK ENDED Oct. 4	Oct. 11
LOUISIANA:				
North Louisiana	.....	.....	78,800	79,400
South Louisiana	.....	.....	252,800	255,800
Total Louisiana	332,000	339,233	331,600	335,200
KANSAS	253,000	253,000	239,700	231,650
NEW MEXICO	114,600	114,600	115,500	114,500
EASTERN STATES:				
Pennsylvania Grade	73,800	.....	74,950	75,250
Others, Eastern	24,300	.....	18,500	18,500
Total Eastern States	98,100	.....	93,450	93,750
MOUNTAIN STATES:				
Wyoming	84,300	.....	87,700	87,800
Montana	20,300	.....	20,450	20,400
Colorado	5,000	.....	4,900	4,900
Total Mountain States	109,600	.....	113,050	113,100
MICHIGAN	44,100	50,000†	52,400	53,650
INDIANA	20,100	.....	19,800	19,950
ARKANSAS	78,200	73,415	75,550	74,800
MISSISSIPPI	43,900	.....	59,850	61,250
NEBRASKA	4,300	.....	7,000	6,900
§Total 8 Prorated States	3,336,700	3,305,405	3,124,850	3,364,700
Total United States	4,012,000	.....	3,851,650	4,065,950

* Recommendation of Conservation Committee of California Oil Producers.
† Estimate of actual production under prescribed regulations, which do not fix a definite state total allowable.
§ Texas, California, Oklahoma, Louisiana, Kansas, New Mexico, Arkansas, Michigan.
‡ Calculated daily average of actual production at beginning of October, allowing for usual under production of 3½ percent below net allowable, which was figured as of October 1, at 1,485,966 barrels daily. However, allowable normally increases as new wells are completed, and actual daily average production for month is expected to conform with Bureau of Mines estimate of demand. Under October order, most Texas fields were ordered shut down October 4, 5, 11, 12, 18, 19, 25, 26 and 31. Panhandle was ordered shut down October 5, 12, 19 and 26.

tively seeking that crude, have made trades whereby they exchanged current supply in other districts for East Texas production. Stanolind Oil Purchasing Company recently made a deal to deliver Pure Oil Company 11,000 barrels of East Texas crude daily in exchange for an equal volume of Oklahoma crudes, including 7000 barrels daily from Pure's Cumberland field. That deal was highly satisfactory to both parties, as Pure had urgent need for the sweet crude for its Smith Bluff refinery on the Texas coast, while Stanolind Pipe Line Company's facilities for transporting sweet crudes from East Texas and Gulf Coast currently were operating at capacity, due to bottleneck in its system in North Texas.

In late September, Magnolia Petroleum Company concluded arrangements to deliver between 5000 and 7500 barrels of East Texas crude daily to Shell Oil Company, and the latter to supply an equal volume of Illinois crude daily to Magnolia for consignment to Socony-Vacuum Oil Company's refineries. The Illinois crude is loaded by Shell into tank cars at Benton, Illinois. In recent months, deals have been made whereby East Texas crude has been exchanged for West Texas and Panhandle oils.

Encouraging to the industry was last week's information that the British might release 10 to 15 tankers from shuttle service within a short period in view of reduced sinkings and increased efficiency of handling of tankers, although groans arose when Coordinator Ickes warned in that connection that the returned tankers might be used for hauling molasses from Cuba for manufacture of ethyl alcohol.

Further progress has been made in allaying the East Coast shortage through stepping up of railroad tank car movement of crude from the Middle West and the Southwest to the Atlantic seaboard to 80,000 cars a day, and this railway movement at the same time naturally has strengthened the demand for crudes in the areas in which the oils are obtained.

Prices of refined products showed no material changes last week, in most instances, although natural gasoline was up ⅛ cent a gallon more in the primary markets. Light fuel oils also were quoted ⅛ cent higher by some refiners of the Mid-Continent and by suppliers in the Middle West.

Demand for all products continued strong in all districts, in reflection of the prosecution of the defense program, and despite near-record production and processing of crude, there was ready market for all crude and products available.

Crude Output Near Peak; Illinois Rise Arrested

United States crude oil production came within about 8000 barrels of setting a new record in averaging 4,065,950 barrels daily during the week ended October 11. Output was up sharply from the previous week's rate, as Texas fields were shut in only 2 days, compared with 3 the week before, the national production having shown an increase of 214,300 barrels, and having been 53,950 barrels a day greater than market demand as estimated for October by the Bureau of Mines.

Whereas Illinois previously had been steadily increasing, that state showed a decrease of 27,350 barrels, having averaged 406,300 barrels daily. California was up nearly 30,000 barrels to 662,400 daily, which was about 50,000 above demand. Oklahoma was down a little to 428,100 barrels daily, in close conformity with the state allowable but 53,000 under the demand for Oklahoma crude. Kansas averaged 231,650 barrels daily, which was about 20,000 less than the allowable and the estimated demand. Louisiana was up about 4000 barrels to 335,200 daily but was somewhat under demand.

Canadian Crude Oil Output Reached Record in September

Canadian oil production, coming almost entirely from Turney Valley, reached a new high in September of almost 27,600 barrels daily. Turner Valley's rate was 27,350 barrels. Canadian production has been climbing all year, having started from a daily average of 24,500 barrels last January.

During September, Turner Valley had 5 new wells on production for a total of 5053 barrels daily. These wells and their initial daily output were: Royalite Model 1, 806 barrels; Ace Royalties 1, 1223 barrels; Major Oil Investments 2, Northwest H.B. 6 and Royalite 59, total of 3024 barrels. The only other well to go on production in Alberta Province was Dominion Suffield 1, a gas well making 335,000 feet per day initially. Turney Valley had 4 new wells spudded in. Elsewhere in the province, 3 new wells were spudded.

Canada has at last had to resort to gasoline rationing. Having failed to bring about the necessary reduction in consumption by various measures including night closing of filling stations and appeals to the public to reduce driving, the government has ordered October deliveries to stations reduced by 25 percent of the volume sold in August. The order provides preferences for gasoline sales to necessary vehicles such as buses, trucks and farm tractors.

Last month the government predicted a serious gasoline shortage in western Canada this winter, pointing out that the Turner Valley field could not meet the requirements. A shortage of tankers exists. Recent pleas for drivers to reduce gasoline consumption by 50 percent were unsuccessful.

Government's Operations Boost Argentine Output

Increased productivity of the Mendoza field has contributed largely to the 7.2 percent increase in Argentina's oil output this year. Mendoza production in 1939 was 785,000 barrels and 2,500,000 barrels last year. The field's production through last August indicates that about 3,000,000 barrels will be produced during 1941.

Greater output of the government's oil company, the Y.P.F., is entirely responsible for the 7.2 percent gain in Argentine production through the January-July period over the same period of 1940. The government company this year through July produced 7,941,424 barrels as against 6,830,000 barrels during January-July of 1940, an increase of 16.2 percent. Production by private companies, which receive little government encouragement, has steadily declined in the last several years.

Despite gains at Mendoza, the Comodoro Rivadavia continues as the leading Argentine producing region.

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U. S. FIELD OPERATIONS

Illinois Basin

Lawrence County Wildcat Swabs Small Amount of Oil

Lawrence County wildcat produces on swab test; Mill Shoals field of White County extended a half mile northwest into Hamilton County; new productive zone for old Allendale field of Wabash County; Mt. Carmel field, Wabash County, extended quarter of a mile southeast into Gibson County, Ind.

Lawrence County: J. E. Bauer's All State 1, SE SE SE NW 22-2n-11w, 7 mi sw Vincennes, Ind., swabbed 53 barrels in 2 hours from Bethel, 1747-58 ft and then settled to swabbing 1½ barrels every 30 minutes before it was shut down.

Hamilton County: Cherry-Kidd-Sloan's Gardener 1, SE NE NE 24-3s-7e, half mile northwest of Mill Shoals field, White County, flowing by heads after plug drilled to Aux Vases topped at 3231 ft, total detph 3252 ft. Operators estimated it would make 500 a day natural.

Wabash County: Patton's Stillwell 1, SW NW SW 27-1n-12w, an old Biehl sand well drilled deeper, pumped 103 barrels in 24 hours from Tar Springs sand at 1686 ft to give Allendale field a new productive zone; other pays there are Bethel, Biehl and McClosky lime. Princeton Mining Co.'s Smith 1, NE NE SE 21-1s-12w, Gibson County, Ind., 1500 ft southeast of production in Mt. Carmel field of Wabash County, Ill., had 1100 ft of oil in hole after 10-quart shot in Cypress pay at 1979-89 ft. Estimates of production ranged from 50 to 75 barrels a day.

Edwards County: H. K. Riddle's Troops 1, C S½ NW SW 17-3s-14w, ¼ mile west of Grayville, probably will be abandoned; Ste. Genevieve topped at 3120 ft but McClosky was dry; Aux Vases, topped 3001 ft, carried 4 ft light stain.

Gallatin County: Delta Drilling Co.'s Miner Unit 1, NE NE NW 28-8s-9e, hailed a short time ago as a McClosky pool opener, shut down after perforating Cypress; test was completed at 2833-36, 49-55 and 60-70 ft, and initialed at 200 barrels a day but production in a few days dropped to 10 barrels which prompted operators to perforate Cypress.

Marion County: Swan-King Oil Co.'s Kotva 2, SW NW 36-4n-2e, offset to Rosiclare pool opener, pumped 22 barrels in 24 hours after shot in pay at 2088-2110 ft.

Indiana

Revival of activity in an old shallow field of northwest Pike County is indicated in Reynolds Oil Company's McAtee 1, NW NW NW 19-1n-9w, which was drilling plug to test Waltersburg saturation at 1048-54 ft. 1200 ft northwest of production in an old shallow field, and 3 miles east and south of a recent McClosky discovery in Gibson County.

Gibson County: Princeton Mining Co.'s Smith 1, NE NE SE 21-1s-12w, 1500 ft east of production in the Mt. Carmel field of Wabash County, Illinois, filled with oil to 1100 ft after 10-quart shot in Cypress, at 1979-89 ft; cleaning and testing. Walter Miller's Kerr 1, NE SW NE 26-1n-10w, half-mile southwest of Sylvestre's Potts 1, McClosky discovery, drilling plug to test McClosky saturation at 1737-42, about flat, structurally, with discovery well.

Posey County: In the Caborn field, Charles Loveless' Dausman 1-A, NE NW NE 25-6s-13w, initialed 20 barrels in the first 24 hours from horizon tentatively identified as Clore, just above Palestine sand, at 1686-91 ft—a new pay for this field.

Oklahoma

New Hunton Lime Production Opened in Seminole County

New Hunton lime pool for Seminole County area; good producer added East Cromwell field; salt water apparently defines northwest edge of Lake Tecumseh pool; Pottawatomie County active.

Seminole County: Don Mar Oil Co.'s Smith 1, SEc NE 29-8-6e, topped Hunton lime 4354 ft, drilled in to 4398 ft, flowed 125 bbls oil in 12 hrs through ¼-in tubing choke; new production 1½ mi southwest of old Bowlegs area which produces from Wilcox sand.

Okfuskee County: J. R. Higgins et al's Sands 6, SEc 26-11n-8e, may be largest producer for new East Cromwell extension, well topped Cromwell 3418 ft, drilled to 3435 ft, on drilling plug well kicked off and flowed 2350 bbls oil in 24 hrs, natural; field allowable 300 bbls daily.

Pottawatomie County: Salt water has apparently defined northwest edge of Lake Tecumseh pool, Hall-Jordan Oil Co.'s Pensoneau 4, NW SW SW 36-10-3e, topped Wilcox 5025 ft, 7-in at 5024 ft, drilled in to 5232 ft, hole filled with salt water and small show of oil; squeezed and waiting. Anderson-Prichard Oil Co.'s Nadeau, C SW SW 19-9n-5e, near Earlsboro pool, topped Hunton lime 4100 ft, drilled to 4142 ft, swabbing 10 bbls oil per hr, opens new area. Atlantic Refining Co.'s Higbee 2, SE SW SW 22-9n-4e, East Tecumseh pool, inside well, completed 243 bbls oil in 24 hrs, pump, total depth 4671 ft, second Wilcox sand. Amerada Petroleum Corp.'s Peters 2, SWc SE 27-8n-4e, E. North St. Louis pool, completed 388 bbls oil daily through 1-in choke, total depth 3490 ft, Hunton lime.

Carter County: Gibson & Jennings' Hoover 4, NE SW SE 20-4s-2w, in West Hewitt field extension, opens new zone for field; topped Viola lime 2965 ft, drilled to 2995 ft, was swabbing 7 bbls oil per hour.

Two Indian lease sales set for October 15 and 21 are drawing the interest of Mid-Continent oil men. The two sales will be held at Muskogee and at Anadarko respectively.

At the Muskogee sale 126 tracts comprising 9,955.05 acres will be offered for sale in Washington, Rogers, Nowata, Tulsa, Creek, Okmulgee, Okfuskee, Hughes, Seminole, Haskell, Pittsburg, Pontotoc, Garvin, Grady, Stephens, and Marshall counties.

The Kiowa Indian agency at Anadarko will offer for sale 502 tracts containing 70,107.07 acres lying in the following counties: Caddo, Cotton, Comanche, Grady and Tillman.

Kansas

Rice County Test Swabbing In for New Pool Opener

New pool in Rice County. Mile extension given Hall-Gurney district. Another new oil area for Cowley County discovered. Zenith pool extended.

Rice County: Aladdin Petroleum Co.'s Lackey 1, C S½ SW SE 7-21s-6w, 1¾ mi southwest Barnholdt pool, Mississippi lime 3337-3349 ft, deepened to 3364 ft, oil rose 500 ft in the hole, increased to 2800 ft, now swabbing 12 bbls per hour, trace of water, setting tanks to take potential; opens new producing area.

Russell County: El Dorado Refining Co.'s Mohl 1, SEc 18-14s-13w, extends Hall-Gurney pool nearly 1 mi north, well good for 153 bbls oil daily on potential test, producing from Gorham sand 3258 ft.

Cowley County: Tulsa Oil Co. et al's Moore 1, SE NE NE 15-32s-5e, I mi east of Frog Hollow pool, has opened new area, topped Bartlesville sand 3028 ft, drilled in to 3085 ft, shot 60 qts, hole filled 2800 ft oil, testing.

Stafford County: Deep Rock Oil Corp.'s Henry 1, C W½ SW SW 3-24s-11w, extends Zenith pool north, drilled 3762 ft in Viola lime, flowed est 30 bbls oil per hour, acid 5000 gals, then flowed 55 bbls per hr, shut in for potential; Operator's Crist 1, C E½ SE SE 4-24s-11w, Henry 3, C E½ SW SW Sec 3, Henry 4, C W½ SE SW Sec 3, locations.

Graham County: Newman & Heitgras et al's Wells 1, C E½ SW SW 18-7s-24w, near Hill City, topped Kansas City-Lansing lime 3995 ft, drilling below 4125 ft, checking 74 ft high structurally.

Nebraska

Skelly Opens Fourth Pool in Richardson County

Fourth new pool for Richardson County. Saturation may prove trend for one-well pool. Gage County wildcat has show of oil in shallow zone.

Richardson County: Skelly Oil Co.'s Roesch 1, C N½ NW 36-3n-16e, 8 mi north of Falls City pool, topped Hunton lime 2432 ft, perforated 2437-88 ft with 66 shots, swabbing 21 bbls oil per hour, operators expected to make further development in the new pool. Skelly Oil Co.'s Wallraff 5, SE SW SW 20-1n-16e, topped Hunton lime 2216 ft, perforated 2277-86, hole filled 500 ft with oil and no water in 1 hr, testing.

West of Salem: Frank Power's Albin

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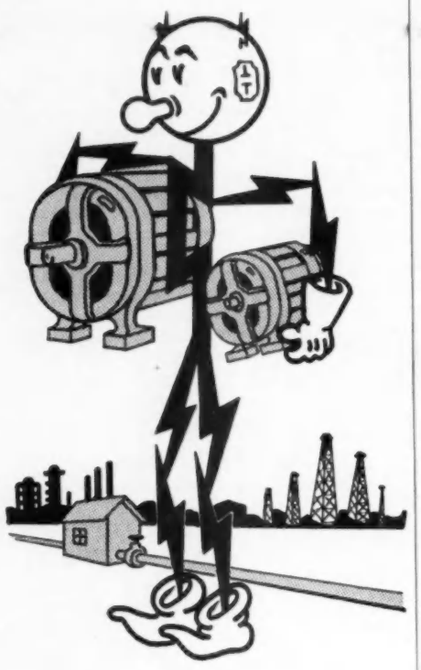

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2, NE NW SE 9-1n-14e, 5 mi west of Salem, topped Hunton lime 2218 ft, cored to 2225 ft, recovered 7 ft saturation, running casing; test may uncover trend of this one-well pool discovered by Uhri Oil Co.

Gage County: Nelson Drilling Co.'s Edius 1, CW1 E½ SW 5-3n-7e, drilling 945 ft in Topeka lime; S. F. Miller's Pethoud 1, C E½ NW SW 2-4n-6e, reported good show oil in shale at 608 ft, now underreaming 5½-in casing at 913 ft; Nuttle et al's Robert Taylor 1, NEc SE 15-3n-6e, cleaning out 1015 ft.

Lancaster County: August Kruger's Roe 1, NE SE SW 5-7n-7e, topped Hunton lime 1536 ft, shutdown at 1700 ft.

Rocky Mountain Area

Gas Discovered on East Side Sweet Grass Hills

Haystack Butte structure on the east side of Sweet Grass Hills uplift, Montana, is a gas discovery while two wildcats in Colorado which indicated possible pool openers were disappointments.

Haystack Butte: Montana-Dakota Utilities Co.'s Oswood 1, CNE SW 18-35n-4e, Liberty County, Montana, completed for 1,500,000 gas daily, perforations sand in Colorado shale, 2190-2240 ft, total depth 2925 ft.

Iron Springs: Great Divide Oil Co.'s Wyatt 1, NW NW SE 6-9n-92w, Moffat County, Colorado, which had show oil in basal Wasatch, flowed water under 425 pounds pressure drill-stem test 1654-1700 ft, will drill deeper.

Logan County: Mutual Oil Co.'s State 1, C SW SW 32-7n-51w, Sterling district, eastern Colorado, was dry Dakota 4835-4840 ft, shut down; may perforate in Muddy 4718-50 ft where oil sand cored.

Iles Dome: Stanolind Oil & Gas Co.'s Parkinson 19-M, NW SW NE 22-4n-92w, Iles Dome field, Moffat County, Colorado, an old well deepening, cored highly saturated oil sand in Basal Morrison 3467-3502 ft, testing td 3516 ft and showing for well which may lead to deepening campaign.

New Mexico

Offset to Lea County Discovery Passes Show

Offset to Lea County's single discovery for current year passed up small well in upper line, and 2 others nearing pay. Intermediate test for Monument and Skaggs areas showing little oil and gas with water after nitro shot. Producer assured from deeper pay by southeast outpost Maljamar field.

Sale Lake Pool: Harry Leonard and Van Welch's State 2, C SW NW 18-20s-33e, south offset their 250-barrel discovery pumper at 3098-3103 ft, was drilling at 3040 ft, having bailed rate 30 bbls oil daily from sandy lime 3001-09 ft, 7-in 2980 ft. Partnership's State 2, east offset discovery, drilling 2990 ft. Continental Oil Co. et al's Brooks 1-B, drilling plugs from 7-in 2906 ft, elevation 3535 ft.

Lea County: Continental Oil Co. et al's Skaggs 1-B-23, C SW NE 23-20s-

37e, midway between Monument and Skaggs areas, was returning small volume of oil with water while cleaning out and swabbing, having shot with 340 quarts nitro 3770-3902 ft. Tested 1,110,000 ft gas natural when plugged back from sulphur water 3930-33 ft to 3910 ft, elevation 3537 ft.

Wildcats: Culbertson & Irwin's Wingfield-Texaco 1, C NE NW 4-19s-33e, 4½ miles south by west of Corbin pool, landed 7-in 4407 ft, excluding upper shows, and drilling 4470 ft. Richmond Drilling Co.'s State-Shell 1, C SW SE 22-17s-33e, cleaning out after 370-quart nitro shot 4567-89 ft, having plugged back from 4805 ft to 4600 ft.

Maljamar Extension: Barney Cockburn and Westall's State 1, C SW SW 16-17s-32e, southeast outpost, showing 3600 ft oil in hole while removing cavings that resulted from 260-quart nitro shot 4635-4725 ft. Production is from lower section of regular Permian lime.

West Texas

Small Simpson Producer South of Sand Hills Area

Simpson sand yields small oil producer between Sand Hills and Abell areas. Yoakum County prospect lands pipe on strength of nominal saturation regular Permian. Wildcatting increased throughout district. String-shot develops big well in Northern Ward County.

Crane County: Continental Oil Co.'s Jones 1, 1½ miles south of Ellenberger production in Sand Hills area, rated at 100 bbls 42-gravity oil daily, and capable of flowing by heads after building up pressure. Production from Sharp sands 5720-40 ft and 5905-21 ft in Simpson, topped 5545 ft, elevation 2474 ft. Used 1500 gallons mud-acid, with nominal results in open hole 5625-6004 ft. Considered downdip on sharp Ellenberger ridge that affords prolific wells in south portion Sand Hills.

Yoakum County: Honolulu Oil Corp.'s Wright 1-13, NWc Section 13, Block D, and 2¼ miles southwest of recent Terry County wildcat failure that yielded free oil, landed pipe to test oil-stained and slightly porous lime 5190-5262 ft. Topped brown lime 4210 ft and San Andres 4560 ft, elevation 3569 ft.

Dawson County: Ray Albaugh et al's Handley 1, 1¼ miles east by north of county's depleted wildcat pumper, conditioning hole to use tester on broken saturation 4918-77 ft, topped brown lime 4060 ft and San Andres 4590 ft, elevation 3086 ft. In Crosby County, Geo. Callihan and C. L. Wagner's Wahlenmaier 1, drilling lime 2290 ft in San Andres, tentatively called at 2117 ft, elevation 2655 ft.

Wildcat Projects: Broderick & Calvert and Amon G. Carter starting Hayward-Kuehn 1, center Labor 24, League 173, Sutton County School Lands, northwestern Bailey County. Northeastern Hockley County assigned middle Permian prospect by Anderson & Prichard Oil Corp. and American Drilling Corp. on Ellwood ranch, NWc Section 15, Block A, R. M. Thompson Survey. Situated on acreage contributed by Honolulu from its 20,000-acre block, which was acquired after torsion balance survey. Mitchell County, site of first commercial production in Permian basin, continues to attract wildcatters, and latest projects involve Gibson Oil Corp.'s Thompson 1, 5 miles southwest Colorado City, and H. D. McQuain and W. J. Donnelly's Wulfjen 1, 11 miles south of Colorado City. Humble's Ellwood 1, first Ordovician test for county, was drilling shaley-lime 6720 ft.

Ward County: Gulf's Hutchings 161, NE SE NW Section 4, Block F, flowed 2245 bbls 33-gravity oil initial after 932-quart string shot of nitro 2575-3070 ft, total depth 3075 ft. Shell's Sealy-Smith 1, Ordovician wildcat, drilling lime 5930 ft.

Pecos County: Texas Co.'s Williams 1, west offset to 3900-ft Conry-Davis pool discovery, cemented protection string 7-in 2411 ft after flowing oil through tester in new pay 2210-2375 ft, elevation 2375 ft. It is scheduled to continue to regular pay. The upper oil zone was not tested by the 4 completed wells. Sinclair Prairie's Lutz 1, east outpost, was drilling 1895 ft, and will core the 2200-ft section.

Stephens County Confirmation Test Has Light Flow With Gas

Confirmation test for recent northwestern Stephens County wet gas strike making water with light flow. Pumping test underway on Jones County prospect. Six-well program for Merkel area, Northwest Taylor County, has pending completion.

Stephens County: Orion Daniel et

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al's Green 1, NWc TE&L Section 1289 and southwest offset their recent Bend discovery, yielded half million ft gas with spray oil and distillate, used 2000 gallons acid through perforations 3306-27 ft in Bend, topped 3309 ft. T. G. Shaw et al's Stroud 1-B, NEc E½ SW G. Newton Survey, which explored the Bend in the Stroud pool with negative results, flowed 128 bbls 41-gravity oil initial ⅜-in choke after nitro shot in sand 3045-77 ft. Ted Schroeder et al's Corbett 1, semi wildcat, awaiting orders in sulphur water 4721 ft.

Coleman County: Merry Bros. and Perini's Greer 1, recent Strawn discovery 1½ miles south of Goldsboro pool, flowing small heads oil behind 5½-in oil string used in testing sand at 3909-37 ft for initial flow of 88 bbls 43-gravity 4 hours natural. Official gauge deferred to correct the leak.

Jones County: Fain-McGaha Oil Corp.'s Hollid 1, 3¾ miles north Hawley, making pumping test after using 1000 gallons acid through perforations, having plugged back from 2503 ft to 2273 ft.

Taylor County: Staley Oil Co.'s Morgan 1, northwest offset to the 2600-ft discovery for the Merkel-Peckham pool, topped Dothan lime 1978 ft, elevation 1791 ft, and was landing pipe at 1990 ft to test this upper pay zone. Ungren & Frazier's Trinity University 1, 3 miles northwest of production, logged water at 2108-14 ft and was drilling 2380 ft, elevation 1845 ft.

Wildcats: Shell's Patterson 1-A, 3½ miles northwest of Carlsisle 2-well pool, Stonewall County, was fishing drill pipe at 6758 ft near Mississippi-Ellenberger contact, and company's Vaughn 1, southern Fisher County, was drilling 6680 ft in Somerville County. M. E. Davis and Plymouth Oil Co.'s Cousins 1, 2 miles south Glenrose, was drilling dry lime 5460 ft, possibly in Ellenberger, the objective formation.

North Texas

Deeper Production Found At Rock Crossing and Scotland

Deeper pay levels in Rock Crossing and Scotland pools. Promising shows logged by Clay County prospect passed up. Pending oil discoveries in Jack and Young counties cement pipe for completion.

Wilbarger County: Phillips Petroleum Co.'s Waggoner-Bates 10, NE NW NE H&TC 43, Block 4, gave Rock Crossing 3100-ft oil sector a new deep horizon in flowing 94.9 bbls oil on 3-hour gauge through ¾-inch tubing choke after using acid in Ellenberger 3804-15 ft. The company's Waggoner 26-NN, southeast and outside the 3100-ft pay zone, made small flowing well in July, 1938, from detrital at 3746-65 ft.

Archer County: Shell Oil Co.'s Coleman 4-A, Lot 3, ATNCL 74, is the first prolific Mississippian producer for the county and the first completion from this zone in the Scotland pool, flowed 316 bbls oil on 2-hour gauge. Mississippian topped at 5258 ft, and production followed acid treatment perforations 5550-60 ft. R. H. Hawn et al's Edwards-Texaco 1, east outpost, awaiting production test in Mississippian, topped 5575 ft, with 5½-in this level.

Wildcats: Sinclair Prairie's Scheer 1, Clay County geophysical prospect 1½ miles south Henrietta and 6½ miles northwest of New York City pool, was drilling shale 6120 ft after proving dry on drill-stem in conglomerate and sand, carrying oil stain and odor, 6059-67 ft, in Bend, topped 5880 ft. Shell's Maddox 1-A, northeast portion county, was drilling 2910 ft.

Montague County: Walter H. Gant et al's Turner 1, recent wildcat strike within a block owned jointly by Gant and Continental Oil Co. and 5½ miles northeast Bowie, suspended operations temporarily due to litigation after showing for small natural flowing well from conglomerate 6223-38 ft in Bend, topped 6058 ft. Continental's Winder 1, 2 miles east of Stoneburg, was drilling 5770 ft. J. A. Chapman, McFarlin et al's Fowler 1, 2½ miles east by north Ringgold pool, plugging back from barren Ellenberger 5807-6001 ft to test 4800-ft Strawn saturation. Benson Bros. et al's Riley 1, 3 miles northwest Sunset, was drilling shale 5520 ft.

Jack County: Taubert - McKee and Sinclair Prairie's Hoefle 1, which flowed oil and gas through tester at 4817-35 ft in Bend, topped 4794 ft, landed 5½-in at 4803 ft after repairing fire-damaged rig. F. Kirk Johnson et al's Shawver 1, wildcat in southeast part of county, abandoned in Ellenberger water 6164-75 ft. Gas shows passed up in Strawn not tested.

Clay County: Shell's H. Henderson 17-C, ¼ mile east of company's single Mississippian oil producer in Antelope pool, plugged back to 3622 ft to perforate for completion in rgeular Strawn horizons after yielding water in Ellenberger, Mississippian and Bend, topped at 6053 ft, 5930 ft and 5106 ft, respectively. Two main Strawn pays are uniformly level, but the second deep test within the pool recorded dip of 101 in Bend, 291 ft in Mississippian and 61 ft in Ellenberger. Shell's Willis 1, northwest outpost for New York City 3-well Mississippian pool, was drilling at 5930 ft, having topped Bend 5904 ft, being 36 ft low to nearest 6200-ft producer. The company's Willis 2 was drilling at 4120 ft. The above two areas are scheduled to be served by Shell Pipe Line Corporation with an extension from Oklahoma when the pipe is available. Superior Oil Corp.'s Seigler-Shell 1, TE&L Section 3211, 5¾ miles southeast of Burns-Wynn recent 5900-ft oil discovery in Mississippian, abandoned at 6455 ft after yielding water in Bend and Mississippian, topped at 5770 ft and 6240 ft, respectively.

Southern Pacific API Special Train Reservations Mounting

Advance reservations indicate more than 100 will be aboard the Southern Pacific special train leaving Houston at 5 p.m. October 30 for San Francisco to attend the American Petroleum Institute's annual meeting November 3-7. The train will be made up of 8 sleepers, a diner and a lounge, and is scheduled to arrive in Los Angeles at 9:30 a.m., November 1, leave at 8:05 p.m., and arrive in San Francisco at 8:45 a.m., Sunday, November 2. The stop in Los Angeles permits seeing the football game between U. C. and U. C. L. A. Saturday afternoon.

Southwest Texas

Production Opened On Chittim Anticline

Production has been discovered in Edwards limestone on Chittim anticline, a major geological feature of Southwest Texas. Previously the same wildcat showed for a producer in Georgetown formation, pointing to an important development in region. Flank crude production on the LaGloria structure of Jim Wells County also is of possible major consequence:

Chittim Anticline: Wellington's Chittim 2, e of Chittim fld, Maverick County, top Edwards 3848 feet, porosity 3940-50 ft, dst 3926-56 rec 210 ft muddy o, 90 ft sul w, good blow ¼ and ⅜-in ch, 60 min, coring ahead.

Continental's Baker 1, 22 mi se Eagle Pass, Maverick County, coring 2160 ft, had show g 2000 ft.

Lower Gulf Coast: LaGloria Operators Committee's Unit 18, w LaGloria fld, Jim Wells County, perf 6670-6700 ft, flowed 167 bpd 39.5 gr plo, no w 7/64 in ch, 1425 lbs tp, 1650 lbs cp, gor 1420-1. Well taken over by Magnolia and redesignated D. O. Maun 2 as crude rights held by latter. Possibly new lens for field, but first commercial crude in area, indicating flank development. May attempt dual sand comp from perf 6041-60 ft and 6100-12 ft.

Magnolia's Conkle 1, 3750 ft e fld perf 7140-64 ft w 190 shots, comp gas and dist well, surface pres 3100 lbs, bottom hole 3800 lbs. Extends fld. Originally dr in effort to open east flank prod.

Kilgore Dev. Inc.'s Kuck 1, perf 5075-77 ft in Bierstadt snd, comp as o well. Extends Orange Grove one-half mi s in Jim Wells County.

H. Merlyn Christie's J. E. Pickering 1, 9000 ft sw Moore & Ahern's disc of N. LaWard fld, perf in o snd 5203-20 ft to comp. Would extend fld just opened in Jackson County.

Magnolia's Vordick 1, 1½ mi e LaWard fld, Jackson County, perf 5204-7 ft, flowed gas 3/16 ch 1200 lbs tp, 1350 lbs cp. Well originally showed o but junked hole and perf higher.

Humble O. & R. Co. completing King-Paso Ancho 1, Kleberg County, to extend prod Stratton fld across county line.

Chicago Corp.'s Wardner 13, 1½ mi sw crude disc w flank Agua Dulce and w outpost Stratton, Nueces County, dst 6413-18 ft rec 7½ stnds mud and o 100 lbs ¼ and ⅜ ch 10 min, dst 6420-33 ft rec 8 stnds o, some mud, 90 lbs, ¼ and ⅜ ch 10 min, dst 6606-20 rec 1 jt dist 400 lbs ¼ and ⅜ ch 6 min, coring near 7000 ft.

George Buescher's Knight 1, n offset Petronilla disc, coring 6350 ft. New play commencing between this pool and Shield fld.

Wellington's Welder 3-B, still testing, showing high gas ratio, perf 6751-57½ ft. Attempting to open deep crude snd Odem fld, San Patricio County.

Henshaw Bros.' John Hancock Insurance Co. 1, 2 mi s Sinton, San Patricio County, abd 7215 ft, had sand oil show 5553-58 ft.

Wilcox Trend: Dirks Bros. and Henderson Coquat's Harris 1, sec 9, for 9000 ft Wilcox test in West Tuleta fld,

Bee County. Third Wilcox wildcat for structure.

Slick-Seeligson's Grissom 1, McEarley sur, 1 mi s Caesar fld, Bee County, new loc for 7500-ft Wilcox well.

Phillips & Adams O. & G. to locate 8000-ft Wilcox test near Green, Karnes County.

Shell's McManus 1, Brushy Creek, Lavaca County, showed gas spray dist above 11,000 ft in Wilcox, pb 7438 ft to test.

Shell's Neuhaus 1, 4 mi s Vienna Wilcox fld, Lavaca County, logged Cockfield show 5050-84 ft, dr below 9500 ft in Wilcox.

Shell's Plow Realty Co. 1, n outpost, Sheridan, Colorado County, fsh abt 10,100 ft.

Mirando District: Trinity Gas Co.'s Casey 2, ¾ mi w Sejita fld prod, Duval County, perf 5770-85 ft, comp gas and dist well, SIP 2100 lbs. Extends fld. First well comp in development of field for recycling project.

Chapel Hill-Kilgore Line To Move Gas for Lifting

Delta Drilling Company, Tyler, is laying a 12-mile 6-inch gas line from its 5800-foot Paluxy sand gas-distillate well on northwest edge of Chapel Hill field to the Kilgore sector of the East Texas field. The line will terminate on the G. F. Penn Survey, Gregg County, supplying high-pressure gas for the operation of the company's non-flowing wells in the general area, and also leases held by others. The Paluxy gives a-high yield of distillate at Chapel Hill, but the gas residue must be utilized in order to produce same.

East Texas

Western Limestone County Sub-Trinity Campaign Slowed

Sub-Trinity development in western Limestone County partially defined on west flank when first of series of deep prospects found Lower Marine section cutout. Southeast outpost Opelika pool dry in regular Trinity pay and making deep test for geological information. Majority of active wildcats in district are projected to Trinity.

Limestone County: Farrell Drilling Company and Frank Bryan's Gilliam 1, J. S. Spencer Survey, 7 miles southwest Prairie Hill, failed to encounter Lower Marine section in drilling to Schistose beds at 4867 ft. Although thick section of Marine was recorded by a single deep test to the southeast on the Mexia-Kosse fault trend. Gilliam 1 proved dry on drill-stem test, and hole has been plugged back for tests in Travis Peak and Pettit zones, topped at 3728 and 3610 ft, respectively, elevation 506 ft. Electrical log lists porosity in Pettit at 3644-70 ft and 3690-3710 ft. Stanolind and Ramsey's Norris 1, 5 miles north of Kosse, abandoned in 1938 in conglomerate at 9951 ft, serves as the basis for the deep play through having logged top Lower Marine 7595 ft; Reynolds (Smackover) lime 8525-8895 ft, followed by 790-foot salt bed, then anhydrite, chert, gravel and conglomerate to bottom, elevation 528 ft. Floyd Scott, representing an unnamed operator, purchased lease of about 70,000 acres on a northeast to southwest trend across Limestone County last spring, with plans to drill possible three Lower Marine tests.

Henderson County: Lone Star Gasoline Co. and Shamrock Oil & Gas Co.'s Allyn 2, northwest corner 225-acre tract, John Lawson survey, missed the Opelike gas-distillate in the lower Glen Rose, and was drilling 9480 ft. British-American Oil Producing Co.'s Young 1, western Henderson County, gauged 13 bbls oil and 34 bbls water on last 13-hour test before pulling tubing to reset with packers. Production is from perforations in Rodessa near 7700 ft.

Freestone County: Amerada's Berk 14, southwest extension for Cayuga deep area, flowing small volume oil and gas with water from perforations at 7430-7614 ft tests underway with tubing packers to locate source of water before acidizing.

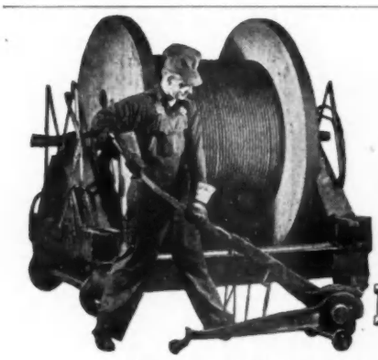
Texas Gulf Coast

Montgomery County Deep Well Drills Ahead

Three Montgomery County wells hold interest. Wilcox well at Lake Creek below 13,000 ft; producer extends Conroe field half mile; Magnolia well opens distillate production.

Montgomery County: With depth record already established, Superior Oil Company is drilling below 13,100 ft in McWhorter 1-B at Lake Creek. Well is deepest on upper Coast and the deepest ever drilled in Wilcox in Texas. With Wilcox topped at 8450 ft, bottom is around 4700 ft in sand. Rumors have spread that several saturated sand sections have been logged. Electrical survey was run to 13,000 ft. Production tests will be made in Wilcox base.

John H. Blaffer's Bailey 1, 2500 ft



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northwest of Conroe production, has proved up new acreage with well flowing 40-gravity oil from perforations at 5074-78; cored 10 ft saturated sand; potential showed 900 pounds on casing, 750 on tubing. Production is from upper Cockfield, total depth 5096 ft.

Glenn McCarthy's Seyle 1, Magnolia area, has opened distillate production in Wilcox with well flowing from perforations 8448-58 ft; on test flowed 6 barrels fluid hour, 4 barrels 51-gravity distillate, remainder wash water. It was at this level that a successful drill stem test was made while drilling.

Wharton County: Wade Wiley has staked E. F. Earl 1, on 80-acre tract, IGN 8, mile northeast of W. R. Davis' Hortman 1 discovery at Lakeview. Davis completed discovery at 3400-11 ft in Miocene as gas well after drilling to Vicksburg.

Louisiana Gulf Coast

Napoleonville Well Tests; Cities Service to Drill

Wildcat on flank Napoleonville dome, Assumption Parish, testing to open field; Cities Service plans deep test on Thornwell prospect, Jeff Davis Parish.

Assumption Parish: George Echols and J. Ray McDermott continue production tests in Armeliese Planting Company 1, east flank Napoleonville dome. Several thin sand bodies near bottom of hole have been tested with no success. Test due to be made at 8385-8400 ft, one of best sands. Another sand indicating production was logged at 8350 ft. First test at 8801-11 ft was dry.

Jeff Davis Parish: Cities Service is surveying location for deep wildcat on 4000-acre block in Thornwell area. Prospect was worked by Cities Service geophysical party after taking shooting options. No deep test has been drilled in area, it being five miles north of Lakeside. Part of acreage lies in Cameron Parish.

Evangeline Parish: Texas Co.'s LeDanois Land Stone Co. 1, southwest flank Pine Prairie field, 2 miles west of production, is holding interest as drills below 6487 ft. Operators are watching well to determine its relationship with Pine Prairie wells.

C. & I. Production Co.'s Evangeline Land & Minerals 2, east of discovery well at Pine Prairie has spudded. The company drilled the discovery well 4 months ago. Pan American is drilling below surface pipe in Guillory 2, company's second well in field, Harry Edwards Drilling Company, contractor. E. J. Nicklos is reported preparing to stake location on flank of structure.

J. A. BATTLE, JR., engineer for The Texas Company and Miss Elizabeth Lowery were married at New Orleans October 11. The bride has been employed in the office of George Lilly, Louisiana oil man, for some time.

North Louisiana

Locations for Week Break 20-Year Record

Forty-one locations staked last week in North Louisiana of which 24 in LaSalle Parish and 5 others for "Olla Trend," including 7500-foot test, to set new 20-year record; hearing October 14 on 320-acre space rule for Louisiana side Logansport-Joaquin gas field; workover at Greenwood shows for small gasser.

Logansport Space Rule: Two protests dismissed by Louisiana Conservation Commission last week at new 320-acre space rule for Louisiana side of Logansport-Joaquin gas field, pending commission hearing on permanent rule for field to be held at New Orleans October 14.

Greenwood: Delta Drilling Co.'s Thigpen-Herold 1, NW SW 2-17n-16w, at Greenwood, Caddo Parish, abandoned as failure after two small gassers completed there 10 months ago to open 2600-ft gas field, re-worked, and last week after perforating casing 2616-18 ft showed 10 million cubic feet gas daily.

Leasing: H. A. Schoffield, Houston, secures 12,000 acre block held in Catahoula Parish by W. R. Davis and test will be started by December 1. Carter Oil Co. and Magnolia Petroleum Co. actively leasing Grant Parish. More tests will be drilled in lakes and bayous

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STATEMENT OF CONDITION AT THE CLOSE OF BUSINESS WEDNESDAY, SEPTEMBER 24, 1941

RESOURCES		LIABILITIES		
Cash and Due from Banks	$ 66,845,915.89	Deposits		$161,435,590.40
U. S. Government Obligations, Direct and Fully Guaranteed	45,801,639.69	Acceptances Account of Customers and Letters of Credit		247,068.09
State, County and Other Public Bonds	11,611,227.57	Dividend Declared, Payable October 1, 1941 and January 2, 1942		168,000.00
Other Bonds and Securities	914,797.89	Accrued Interest, Expenses and Reserves		426,072.97
Loans, Discounts and Acceptances	42,475,070.43	Capital	$2,800,000.00	
Customers' Liability Account of Acceptances and Letters of Credit	224,164.22	Surplus	5,700,000.00	
Stock of Federal Reserve Bank	255,000.00	Undivided Profits	2,651,603.29	11,151,603.29
Accrued Income Receivable and Prepaid Expenses	345,070.02			
Banking House, Furniture and Fixtures	3,303,689.19			
Branch Banking Houses	920,206.32			
Other Real Estate	731,553.53			
TOTAL	$173,428,334.75	TOTAL		$173,428,334.75

MEMBER OF THE FEDERAL DEPOSIT INSURANCE CORPORATION

in "Olla Trend" as result of new decision by Louisiana Conservation Commission over Spanish grant lands which are irregularly sectionized. Forty-acre space rule not to be followed due to irregularity of ownerships but production will be prorated on 40-acre basis.

Arkansas

Ouachita County Test Has Show of Oil in Nacatoch

Test between Stephens and Mount Holly shows oil in Nacatoch. Second test to reach Smackover lime at Macedonia shows for oil producer.

Show in Nacatoch: Lee Bergman's Cook 2, NW SW 27-15-18, Ouachita County, six miles north of Stephens field and two miles from abandoned McDonald field near Mount Holly that had several producers in 1928, waiting on casing to be set on top cap rock at 1616 ft after oil show in shallow Nacatoch.

Macedonia Test Shows: McAlester Fuel Co.'s Nipper 1, C S½ SE 16-18-21, second test to reach Smackover lime at Macedonia, topped porosity 8868 ft, drilled below 8900 ft, cemented 5½-in casing at 8865 ft. Four other Macedonia tests drilling.

East Schuler: Atlantic Refining Co. abandoned an offset to the discovery well in East Schuler field, Union County, which has only one producer, and staked location for another test, southwest offset discovery well, Perry Briggs 1, C SW SW 13-18-17.

Alabama Wildcat Drilling Below 12,000 Feet

New depth record set for southeastern states in Alabama wildcat now below 12,000 feet. Tinsley Dome extended south.

Alabama: New depth record for southeastern states set in Union Producing Company's Waite 1, C NW 27-8n-1w, Clarke County, Alabama, drilling ahead below 12,050 ft, on Hatchetigbee Anticline.

Tinsley: Producing limits of Tinsley Dome extended mile south by G. L. Reasor's Sorrells 4, SW NE SE 14-9n-2w, Yazoo County, completed from Woodruff sand at 5006-42 ft, pumping 350 barrels oil daily, 5046 ft.

California

Fresno and Los Angeles Tests Show Encouragement

Two Fresno County wildcat wells hold spotlight in California development activity. Showings encountered by Los Angeles County prospects considered favorable.

Fresno County: Amerada Petroleum Corp. appears to have made a new Temblor zone discovery in the Helm-Cloverdale area, Sec. 34-16-17, in Clover 31-34. Bottomed at 10,257 ft, plugged to 8007 ft, on test of interval 7448-7465 ft through perforations, well flowed 27 barrels, 65.7 gravity oil, cutting 1 percent, in 1½ hours together with 9,476,000 gas through a 50-64 bean. Flowing pressure on tubing was 1400 pounds, shut-in pressure 2600 pounds. Further test scheduled.

Preparations are being made by Wilshire Annex Oil Company to complete its 33-26e wildcat in the Jacalitos Hills area, Sec. 26-21-15. Bottomed at 6031 ft in Cretaceous shale, plugged to 3905 ft formation test of interval 3865 ft to bottom with valve open 1½ hours recovery consisted of 704 ft gassy mud, 1310 ft gassy oily mud, and 443 ft of oil with some mud and emulsion. Earlier tests, judged inconclusive, on same interval resulted in fair blow and recovery of 300 ft of 33-34 gravity oil.

Los Angeles County: Prospects for successful completion of a commercial well by Continental Oil Company in Turnbull Community 1 wildcat in the Turnbull Canyon - Northeast Whittier area, Sec. 13-2-11, are considered good as result of extended swabbing operations. Bottomed at 3447 ft with casing set at 3270 ft, swabbing has cleaned well with oil fluid rise of 1700 ft reported.

Michigan

Lake County Wildcat Has Oil Showing in Monroe

Wildcat shows free oil in Lake County. At Reed City as two tests appear to define east and west limits of field; shallow Stray sand gas well two miles north of field may indicate second closure.

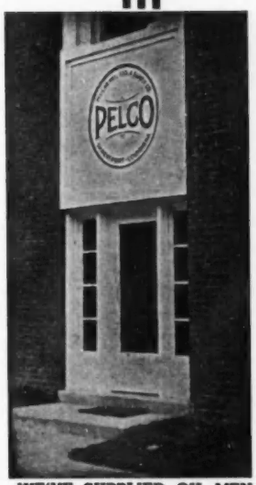
Lake County: W. P. Shoemaker's Smith 1, SE NW SE 17-19n-14w, logged Dundee lime 2691 ft and was carrying free oil at 2821 ft probably in top of Monroe lime section, source of Reed City pool's best production. Test had sub-sea elevation 729 ft to place it structurally higher than correlating dry holes. It is 20 miles northwest of Osceola County field.

Reed City: Three tests semi-completed appeared to define closure on both the east and west and possibly on the north. Gulf Refining Co.'s Bolger 1, C S SE NE 24-18n-11w, Lake County, quarter mile northwest of production, logged Dundee lime at 3580 ft and bottomed at 3690 ft for test with a show of oil and water. It was structurally low. Same company's Truax 1, C S½ NE NE, Section 19-18n-10w, mile north of production, logged Dundee at 2380 ft to place it 50 ft lower than the best producing points in the field. Ohio Oil Co.'s State 2, C N½ NW NW, Section 28-18n-10w, was shut down after logging only a show of oil and water in the objective. Cook & Voorhees' Kremlin 1, C S½ SE SE 8-18n-10w, two miles north of production, logged 2½ gas in the Stray sand at 1200 ft and it showed structure with the field. To date the Stray sand gas production has been a next to sure positive indicator of oil production in the Monroe at 3600 ft.

Roscommon Couny: Freeman Oil Co.'s State 1, C N½ NW NW 34-21n-3w, ¾ mile northwest of the Roscommon discovery, completed, estimated 4400 barrels Traverse lime, 3365 ft; second in field. Previously the east offset to the discovery had drilled both the Traverse and Dundee horizons dry. Hilliard's Felthouse 1, Section 3-20n-3w, south offset to the discovery was shut down at 3500 ft after drilling through Traverse.

Drop Another Bomb, Please

The only thing that saves our wobbling mentality is a perverse sense of humor. Around here these days an order is like an incendiary bomb. It makes everybody flinch, it flutters and tangles red tape from here to Washington and it burns us crisp because we can't serve a customer with old-fashioned straightforward American gusto. Fancy a situation in this country where a college brain truster can step in to referee a forthright business transaction between citizens! However, if it gripes Adolph and Benito, we'll take our quinine dry and love it.



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Arkansas

Ouachita County (Smackover)—
Curtis Kinard, Farris 1, 27-15-15.. * 2809
Union County (East El Dorado)—
Consolidated Pet. Co., Sumner 2, 13-18-14 ..... 28 2240
Union County (East Schuler)—
Atlantic, W. A. Burns B-1, 13-18-17 * 7006

California

Fresno County (Coalinga Eocene)—
Standard, No. 28-31B.....3620 7898
Kern County (Coles Levee)—
Ohio, KCL F-18, 27-11..... 596 9956
Kern County (Greeley)—
General, Rice 1..... 750 11520
Kern County (Mount Poso)—
Shell, Mathews Fee 9..... 289 1795
Vedder-Rall 19 ..... 200 1948
Vedder-Rall 21 ..... 80 1940
Texas, Glide 2-7..... 26 1561
Kern County (Paloma Area)—
Union, Morgan 81-14 ..... * 11456
Kern County (Rio Bravo)—
Superior, Osborn 1-4.....1564 11470
Kern County (Shafter Area)—
Continental, KCL C-2 ..... 362 12934
Kern County (Strand)—
Tide Water, KCL E-6-7.....2320 8493
Los Angeles County (Del Valle)—
Ohio, Vasquez 1.....1512 6195
Los Angeles County (Long Beach)—
Apex Pet. Co., Freeman-Ball 1..... 112 2544
Los Angeles County (Wilmington)—
Brain, Cooper & Heney, No. 3..... 80 3558
Continental Dev. Corp., LACFCD 24 135 3393
George F. Getty, No. 8..... 150 3595
Herley-Kelley, Lagoon Comm. 1... 100 3710
Hoover, Morse & Steele, Hoover 1.. 80 3720
Richfield, R. G. Term. 3..... 80 3300
Union Pacific, UP 202.....No. Est. 3555
UP C-5 ..... 55 3318
Wilmith Petroleum, Inc., Comm. 5 95 3720
Orange County (East Coyote)—
Standard, Coyote 2-15 ..... 399 6925
Orange County (Huntington Beach)—
Signal O&G Co., Signal-Bolsa 32-A.1850 4433
Southwest Explo. Co., State 28..... 310 5632
West American Oil Co., Ashton 8.. 124 4655
Santa Barbara County (Santa Maria Valley)—
R. R. Bush Oil Co., Wylie 3...No Est. 4795

Pacific Western Oil Co., Carranza 3.1250 4941
Carranza 4 .....No Est. 5120
Ventura County (Ventura Avenue)—
Shell, Taylor 102..... 695 7706
Taylor 143 .....2524 8080

OLD WELL DEEPENED

Ventura County (Ventura Avenue)—
Tide Water, Hartman 1 (otd 8155). 504 8670

Colorado

Moffat County (West Hiawatha)—
Mountain Fuel Supply Co., Lashor 2, ne ne ne 25-12n-101w ..... ¶½ 3416

FLORIDA

Dade County (Wildcat)—
Wm. G. Blanchard, Everglades 2, 31-53s-35e ..... * 1280

Illinois

Bond County—
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Clark County—
Grant Gallatain, Gallatain Est. 1, ne ne nw se 19-10n-13w..... 20 515
Clay County—
Gulf, Bettinger 1, sw nw ne 26-4n-7e 38 3047
Bettinger 2, se nw ne 26-4n-7e.. * 3030
Carl Robinson, Tolliver 10, c se nw se 26-4n-7e 150 2334
Geo. Creagor, Henderson 1, nw sw nw 17-2n-8e 26 2675
Pure, Bissey "A" 2, c e½ sw ne 18-2n-8e 283 3083
Chaffin "B" 3, e½ sw ne 19-2n-8e 15 2685
Rockhill Oil, Duff 1, nw sw sw 20-3n-8e 107 2909
Clinton County—
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L. Lillie et al, Sheppard 1, sw sw nw 25-3n-2w ..... * 1305
Paul Doran et al, Kell 1, sw sw nw 36-3n-2w ..... * 1245

Effingham County—
E. F. Jones et al, Deith 1, nw nw se nw 27-6n-5e 72 2332
Gardner Bros., Schottman 1, n½ ne sw sw 27-6n-5e 27 2276
Fayette County—
Carter, Durbin 9, w½ ne se ne 4-7n-3e 60 1591
Hogan 5-D, c nw se 21-8n-3e..... 200 3129
Boles 6-D, s½ sw sw 21-8n-3e... 200 3081
Williams 2, se ne ne 22-8n-3e.... 352 1583
Mills 11-D, c w½ nw sw 28-8n-3e 509 3120
Mills 4-D, c w½ sw nw 28-8n-3e. 200 3123
Union Prod. Pet., Morrison 5-D, ne nw sw sw 8-7n-3e 17 3198
Mize-Cummings 1-D, c w½ ne ne 21-8n-3e 53 3194
Tipsword 2, se sw nw 22-8n-3e.. 174 1505
Williams 3, ne se ne 22-8n-3e.. 408 1582
Franklin County—
Adkins, CW&F Coal 8, nw se se 25-6s-2e 210 2126
CW&F Coal "W" 6, e½ nw ne sw 36-6s-2e 576 2135
J. McFarlane, I.C.RR r-o-w 2, nw se ne 23-6s-2e 75 2135
Pollock et al, Jordan School 1, nw ne ne 23-6s-2e 15 2144
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Adkins, Chenault 4, se se ne 25-6s-2e 358 2135
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Eason, Prince 2, se se ne 36-5s-6e (pb 2977) 120 3083
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Knight 1, nw nw ne 13-6s-5e.... 565 3349
Lockwood 2, sw sw nw 13-6s-5e 24 3175
Freeman 2, ne nw se 11-6s-6e.. 160 3056
McDonald 4, se sw ne 11-6s-6e.. 50 3053
Rivin 2, e½ sw se 27-6s-6e.... 134 3100
Davis 7, sw ne ne 7-6s-7e..... 190 3000
Davis 9, se ne ne 7-6s-7e..... 190 3011

[*Continued on next page*]

*Failures; †Junked; ¶Million cu. ft. gas.

Summary of Drilling Operations in the United States, Week Ended October 11, 1941

	WELLS COMPLETED								[1]PERMITS FOR NEW WELLS				
	Total for Week	New Wells Drilled for Oil and Gas: Oil Wells	Gas Wells	Failures	[3]Miscellaneous	Initial Production	Total 1941	Total this Date 1940	This Week	Total this Month	Total 1941	Total this Date 1940	Year Total 1940
Alabama	.....	.....	.....	.....	.....	.....	2	6	.....	.....	.....	.....	.....
Arkansas	3	1	.....	2	.....	28	133	146	3	9	146	122	153
California	32	31	.....	1	.....	19,862	917	890	19	41	925	827	1,042
Colorado	1	.....	1	.....	.....	.....	15	7	.....	.....	.....	.....	.....
Florida	1	.....	.....	1	.....	.....	1	1	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
[4]Illinois	228	185	.....	36	7	78,389	3,078	3,192	214	214	3,755	3,638	4,532
[4]Indiana	18	10	1	5	2	1,204	419	381	34	34	[2]193	.....	.....
Iowa	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....
Kansas	47	31	3	12	1	46,387	1,772	1,576	69	105	1,842	1,613	2,048
[4]Kentucky	18	8	.....	10	.....	141	264	278	19	19	[2]131	.....	.....
Louisiana	45	28	3	14	.....	4,838	1,202	1,327	57	70	1,381	1,314	1,658
Michigan	13	4	2	7	.....	4,555	649	972	35	52	707	905	1,093
Mississippi	8	8	.....	.....	.....	3,883	164	150	.....	.....	.....	.....	.....
[1]Missouri	1	.....	.....	1	.....	.....	37	18	.....	.....	9	13	26
Montana	9	2	4	3	.....	450	170	149	.....	.....	.....	.....	.....
[1]Nebraska	6	1	2	.....	3	354	74	15	.....	5	87	29	69
New Mexico	12	9	1	2	.....	1,708	300	533	6	13	320	473	559
New York	.....	.....	.....	.....	.....	.....	758	804	.....	.....	.....	.....	.....
Ohio	23	5	12	6	.....	80	1,352	804	.....	.....	.....	.....	.....
Oklahoma	41	28	1	11	1	6,325	1,730	1,678	60	119	1,825	1,454	1,888
Pennsylvania	66	46	4	4	12	64	3,113	2,901	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	.....	16	8	.....	.....	.....	.....	.....
Texas	196	138	7	49	2	75,556	8,185	7,949	224	474	9,662	8,856	11,170
Utah	1	.....	.....	1	.....	.....	3	3	.....	.....	.....	.....	.....
West Virginia	15	1	12	2	.....	15	550	461	.....	.....	163	634	782
Wyoming	4	4	.....	.....	.....	1,198	113	124	.....	.....	.....	1	1
Total this week	788	540	53	167	28	245,037	25,023	24,374	740	1,155	21,146	19,879	25,021
Total last week	660	409	53	143	55	171,632	24,336	23,767	415	415	20,406	19,388	25,021
Total this year	25,023	15,318	1,892	5,344	2,469	6,947,722	.....	.....	.....	.....	.....	.....	.....

[1] This tabulation includes those states where weekly data are available; figures for Missouri date from August 10, 1940; Nebraska from August 3, 1940.
[2] No data available before June 14, 1941.
[3] Includes old wells deepened, water-intake, gas input, and salt water disposal wells.
[4] Includes report for Oct. 4.

United States Well Completions—*Continued*

ILLINOIS—Continued

Company, Well and Location	Init. Prod. Bbls.	Depth
Davis 10, sw nw ne 7-6s-7e	395	2987
Clark 8, sw sw nw 7-6s-7e	200	3021
Clark 7, nw sw sw 7-6s-7e	190	3015
Johnson 4, ne nw se 7-6s-7e	250	3015
Johnson 5, sw ne se 7-6s-7e	270	3025
Magnolia, Sloan 1, se ne nw 13-6s-5e (pb 3310)	316	3362
N. V. Duncan, Davenport 1, nw ne se 11-6s-6e	*	3055
Kingwood, Dodd 7, se sw nw 6-6s-7e	300	3003
Pure, Cuppy 15, nw nw sw 6-6s-7e	750	3015
Fairweather "A" 4, sw nw sw 7-6s-7e	83	3135
Shell, Beagle 5, sw se se 6-6s-7e	105	3001
Cameron, Kern 4, nw sw sw 7-6s-7e	150	3041
J. J. Callahan et al, Ulrich 1, c sw se se 6-6s-5e	*	3490
Kingwood, Hatcher 1, nw nw ne 14-6s-5e	*	3453
Johnson 3, se se ne 14-6s-5e	211	3169
Texas, Lockwood 1, se ne ne 14-6s-5e	682	3200
Lockwood 2, sw ne ne 14-6s-5e	590	3233
Bond 1, se nw ne 34-6s-6e	34	3120
Jackson County—		
W. E. Sheals et al, Williams Est. 1, ne ne sw 33-7s-1w	*	2319
Jasper County—		
Hayes, Ross 1, c se se sw 5-6s-10e	1000	2800
Pure, Ross 2, nw se se 5-6n-10e	283	2790
Texas Co., Gregorie 4, ne sw se 5-6s-10e	146	2785
Joe Carroll, Ross 1, nw sw ne 8-6n-10e	426	2840
Pure, Shinn 7, c s½ se ne 8-5n-10e	150	2805
Bergbower "A" 2, c nw ne se 8-6n-10e	171	2799
Jefferson County—		
C. F. Frazier, Luchsinger 1, e½ se nw 3-1s-2e	8	2008
Luchsinger 3, ne sw nw 3-1s-2e	76	1984
Carter Oil, Williams 1, 21-1s-2e	24	1975
Harding & Harlowe, McMurran 1, ne nw ne 26-1s-3e	*	708
Magnolia, Rynski 1, s½ ne ne se 34-2s-1e	Salt Wtr Disp.	1998
Shirley 9, ne se ne 35-2s-1e	235	1994
Shirley 10, se se ne 35-2s-1e	557	1993
Oslager 3, nw se nw 1-3s-1e	588	1978
Berling & Duncan, Burkhardt 1, sw ne ne 35-2s-1e	105	2002
Shell, Burkhardt 4, ne sw ne 35-2s-1e	125	1980
W. C. McBride, Inc., McMillen 2, ne nw sw 36-2s-1e	550	1996
Piper 1, nw sw sw 36-2s-1e	415	1985
Eubanks 3, sw nw ne 2-3s-1e	495	1959
Nations Oil Co., Piper 3, sw sw sw 36-2s-1e	528	1958
Piper 4, se sw sw 36-2s-1e	500	1986
Piper 1, ne nw nw 1-3s-1e	625	1961
Piper 2, se nw nw 1-3s-1e	595	1948
Texas, Troutt 1, sw sw nw 36-2s-1e	328	1961
Troutt 2, nw sw nw 36-2s-1e	240	1963
Schmitt 1, nw sw nw 1-3s-1e	368	1933
Walker 2, se ne nw 2-3s-1e	240	1964
Walker 4, nw sw ne 2-3s-1e	350	1953
Gulf, Eubanks 8, sw sw sw 35-2s-1e	70	1968
Kingwood, Bank of Woodlawn 8, ne se nw 35-2s-1e	300	2002
Magnolia, Eubanks 4, ne se se 35-2s-1e	612	1989
Shirley 7, ne ne se 35-2s-1e	456	1961
Eubanks 6, sw nw nw 1-3s-1e	336	1945
E. A. Oberling 2, Burkhardt 2, se ne ne 35-2s-1e	*	2059
A. B. Potter, McMillen 2, sw nw sw 35-2s-1e	175	2000
S. C. Yingling et al, McMillan 1, sw nw sw 36-2s-1e	576	1990
McMillan 2, se nw sw 36-2s-1e	460	1984
W. C. McBride, Inc., Hoppa 1, nw ne ne 2-3s-1e	528	1945
Texas, Walker 5, ne sw ne 2-3s-1e	362	1951
LaSalle County—		
Elko O&G, Duncan 1, se ne nw 27-33n-1e	*	1200
Lawrence County—		
Big Four O&G, Gulispie 35, n½ sw se 26-3n-12w	*	3365
Marion County—		
Highland Oil, Thalman Est. 4, ne sw nw 35-4n-1e	30	1364
Beckman & Gordon, Thomas 1, nw sw sw 35-4n-1e	*	1515
Swan-King, Kotva Hrs. 1, s½ sw nw 36-4n-2e (pb 2113)	219	3692
Richland County—		
Anderson & Voorhees, Williams 1, c e½ nw sw 8-2n-14w	*	3237
Ohio, Koertge 2, c n½ se nw 29-2n-14w	1192	3128
Sinclair-Wyoming, Clodfelter 3, n½ nw sw 29-2n-14w	1242	3137
Anderson & Fields, Higgins 1, ne ne nw 35-2n-14w	*	3023
Saline County—		
Thompson, Reich 2, nw sw ne 8-8s-7e	*	2594
Wabash County—		
Adams Corner O&G, Adams 2, se ne nw 16-1n-12w	100	2290
Snowden & McSweeney, Cozino 1, c nw nw ne 16-1n-12w	175	2292
Dean & Morton, Sprinkle 2, se ne ne sw 21-1s-12w	100	1485
Continental, Shultz "A" 9, sw ne se 8-2s-13w	86	2594
L. E. Kennedy et al, Couch 2, c s½ sw 16-1s-12	150	1486
Carson 3, sw ne se sw 16-1s-12w	335	1494
Dean & Morten, Sanford 1, sw se se nw 21-1s-12w	40	1496
Sanford Hrs. 2, se se se nw 21-1s-12w	120	1993
1st Nat. Pet. Trust, Samuels "C" 1, w½ w½ se nw 21-1s-12w	35	1483
Samuels "C" 2, nw se nw 21-1s-12w	35	1496
Samuels "C" 4, Lot 172, 21-1s-12w	75	2000
W. F. Lacy, Friend 2, se sw ne sw 21-1s-12w	170	1993
Adams Corner O&G, Wright 3, ne se sw 9-1n-12w	5	1508
J. G. McNeil, Knolhoff 2, n½ nw sw 11-1n-2w	21	1192
Jordan, Buchanan 5, se se nw 12-2n-12w	*	1657
Wabash Oil & Gas, Carrie 1, ne sw ne 21-2n-12w	*	2445
L. B. Jackson, Breen 1, sw nw nw 31-2n-11w	*	2143
Washington County—		
Amerlagnene, Inc., Erbes 2, ne nw sw 10-1s-1w	60	1519
Wayne County—		
New Penn Dev. Corp., Harriss 1, w½ ne nw 31-2s-9e	*	3385
Watkins & Weinert, Rossler 1-B, e½ sw sw 36-1s-7e	360	3343
Wiser Oil, Vaughaan 1, e½ nw ne 1-1s-6e	300	3285
Matchett 1, n½ ne se 27-1n-6e	2068	3114
Dickey "B" 1, n½ se sw 34-1n-6e	1100	3208
Pioneer Drlg. et al, Williams 2, n½ sw ne 22-1n-6e	*	3255
Texas, Greathouse 1, s½ se nw 27-1n-6e	69	3094
Gulf, Rosa "B" 3, n½ sw sw 34-1n-6e	2975	3202
Jablonski, Bratton 1, s½ nw ne 35-1n-6e	2400	3170
Pure, Carson 2, c e½ se ne 11-1n-7e	844	3074
Watkins-Weinert, Ferguson 1, c e½ nw nw 1-2s-7e	530	3322
Texas, Rash 1, c s½ se ne 7-3s-6e	56	3347
Watson 4, n½ sw sw 26-1n-6e	500	3126
Leathers 6, c n½ ne se 28-1n-6e	1560	....
Watson 5, c n½ nw nw 35-1n-6e	800	3132
Gulf, Porterfield 1, c w½ ne nw 1-2s-7e	359	3327
Rosa "B" 2, c s½ nw sw 34-1n-6e	2077	3180
Pure, Marshall "A" 1, c w½ sw nw 16-1s-8e	*	3257
Garrison Consol. 2, c w½ se se 36-2n-7e	56	3070
Keith "C" 2, c w½ se ne 36-2n-7e	241	3113
Evans "A" 2, c w½ nw ne 28-2n-8e	41	2648
Hubble "B" 1, c e½ se nw 28-2n-8e	33	2648
Hosselton "C" 1, nw ne se 30-2n-8e	*	3070
Pioneer Drlg. et al, Schell 1, c n½ nw sw 25-1n-6e	*	3224
C. R. Ross, Rogers 1, n½ nw sw 26-1n-6e	822	3172
Weiser Oil, Matchett 1, c n½ se ne 27-1n-6e	9300	3119
Lowe 1, n½ sw ne 33-1n-6e	2500	3230
Shell, McReynolds 2, c s½ ne ne 33-1n-6e	1986	3107
United Prod., Hale 1, n½ nw ne 33-1n-6e	650	3190
Deep Rock, Pennington 1, c n½ ne nw 35-1n-6e	840	3145
White County—		
Longhorn Oil, Helm 17, w½ w½ se nw 23-3s-14w	150	2863
Helm 18, sw ne se nw 23-3s-14w	125	2646
Rockhill Oil, Reeves Hrs. 3, w½ se se nw 28-3s-14w	*	2883
W. C. McBride Inc., Crawford 2, sw se ne 32-3s-14w	210	2957
Morrison & Noah, Curtis 1, se se nw 22-3s-10e	30	3246
Wall & Mitchell, Hatcher Hrs. 1, nw nw se 22-3s-10e	144	3273
Tide Water, Evans 7, se se ne 5-4s-14w	175	2842
Baker 5, se se se 11-7s-8e	50	2756
Superior, Fitton 26, ne nw nw 23-4s-14w	146	2870
Fitton "A" 16, nw sw sw 28-4s-14w	146	2854
Fitton "A" 21, sw sw sw 28-4s-14w	100	2862
Given et al 14, w½ ne se 33-4s-14w	160	2729
Fitton "A" 20, nw nw nw 33-4s-14w	150	2860
Sun, Greathouse 35, ne ne sw 33-4s-14w	132	2596
J. B. Thompson, Grey 1, s½ sw sw ne 26-6s-8e	160	3063
Pure-Carter, Atchley Consol. 1, sw sw sw 8-6s-9e	55	2835
Neel 1, ne ne ne 18-6s-9e	97	2818
1st Nat. Pet. Trust, Karch 1, se se sw 13-6s-10e	270	2021
Carter, Fuller 5, se ne nw 11-7s-8e	*	3035
Sinclair-Wyoming, McKenzie 5, se ne se 11-7s-8e	124	2905
Tide Water, Baker 5, se se se 11-7s-8e	50	2756
Kingwood-Sinclair, McKenzie 3, nw nw sw 12-7s-8e	58	2751
1st Nat. Pet. Trust, Hon 5, ne ne se 32-3s-14w	125	2853
Karch "A" 3, nw sw ne 24-6s-10e	90	2026
Mabee O&G, Smith 5, se se sw 4-4s-14w	123	2706
Sinclair-Wyoming, Donald 8, se nw nw 28-4s-14w	40	3031
Superior, Fitton "A" 23, c n½ sw sw 28-4s-14w	200	2732
Fitton 22, se ne se 29-4s-14w	140	3039
Ivan White, Ford et al 2, nw nw se 34-4s-14w	40	3016
Phillips, Garr 5, ne se se 35-4s-10e	*	3101
Angle & Angle, Aud 1, n½ se sw sw 23-6s-9e	*	2254½
Bert Fields, Karch 3, nw se se 13-6s-10e	42	2860
Karch 4, sw ne se 13-6s-10e	170	2230
Cherry-Kidd et al, Karch 7, ne nw ne 24-6s-10e	94	2031
Karch 8, se nw ne 24-6s-10e	200	2028
Magnolia, Sisson-Higgins 7, ne nw se 24-6s-10e	25	1475
Hiawatha O & G, Todd 1, se se se 18-7s-11e	206	2460
OLD WELLS DEEPENED		
Marion County—		
Ohio, Young 20, ne ne nw 29-2n-2e (otd 3426)	275	4620
Maxwell "B" 8, se ne se 30-2n-2e otd 3421)	150	4638
Richland County—		
Godlin & Hoffman, Shannon 1, sw sw sw ne 17-3n-9e (otd 3021)	14	3362
White County—		
Angle & Angle, Aud 1, n½ se sw sw 23-6s-9e (otd 2254)	*	2323

Indiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Daviess County—		
D. L. Norris et al, Dorsan 1, c w½ se se 35-2n-5w	*	528
Decatur County—		
Hoosier Pub. Util., Wells 230, ne sw se nw 11-9n-9e	¶153	894
Gibson County—		
G. Mabee et al, Helm 2, w½ w½ sw sw 22-3s-14w	*	2931
Tide Water Assoc., Doll 15, w½ ne nw se 33-3s-14w	38	2216
Continental Oil, Bozeman Land 49, ne sw sw 23-3s-14w	150	2876
McBride, Inc., Blood 6, nw se sw se 28-3s-14w	214	2807
Hamilton County—		
Hamilton Co. Oil, Nelson 1-A, nw ne sw sw 13-19n-3e	30	1056
Posey County—		
Morgenstern Oil, Mentzger 1, c sw nw ne 34-5s-14w	*	3037
Continental Oil, Kleiderer "A" 12, w½ se sw ne 33-3s-14w (pb 2194)	22	2224
Kleiderer "A" 14, ne sw ne 33-3s-14w	110	2893
Chas. Lovless et al, Daussan 1, ne nw ne 25-6s-13w	*	1200
Central States Pet., L. Seifert 1, nw sw nw 30-6s-12w	70	1652
Seifert 1, nw nw nw 30-6s-12w	452	1105
Lloyd Solan et al, H. Seifert 1, w½ ne nw nw 30-6s-12w	83	1107
Spencer County—		
Goldschmidt et al, Smith 1, se se sw 6-7s-7w	34	1029
Vigo County—		
Kraus, Ricketts & Paulson, Hollenbeck 1, c sw ne 14-10n-8w	*	1895
OLD WELLS DEEPENED		
Newton County—		
Palmer Corp., Henkle 1, se se se 36-30n-9w (otd 485)	*	1001
Orange County—		
U. S. Oil Co., Willyard 1, nw ne sw 33-1n-1w (otd 600)	*	1516

United States Well Completions—*Continued*

Kansas

Barton County—
Skelly, Esfold 5, c w½ se ne 30-16s-11w 3000 3326
Shell, Ehrlich "A" 7, nw se nw 18-16s-13w 1309 3370
W. O. Allen, Stoskopf 1, nw nw nw 29-16s-13w 35 3390
Gulf, Kroutwurst 1, c n½ ne se 9-17s-11w 3000 3281
Hollow Drlg., Schartz 3, c w½ ne nw 18-20s-11w 3000 3318
C. E. Ash et al, Schartz "C" 2, c e½ ne se 12-20s-12w 2590 3330
Texas, Koch 4, c w½ sw sw 7-20s-11w 937 3337
Butler County—
E. B. Shawver, Stone 20, nw se nw 2-25s-5e ..... • 2599
Cities Service, Price 12, nw sw se 5-26s-5e (pb 2465) 130 2481
Cowley County—
Steinbuschel et al, Peck 1, c n½ nw se 23-34s-5e ..... • 3010
Maryiyn Oil, Mosier 1, nw nw sw 21-34s-7e ..... • 2710
Elk County—
A. T. Allison et al, Porter Ranch 1, nw ne nw 25-28s-8e 50 2919
Ellis County—
Dickey, Carmichael 8, c n½ nw nw 17-11s-17w 3000 3371
Ellsworth County—
Continental et al, Kunkle 2, nw ne se sw 28-17s-8w 148 3247
Transwestern et al, Stumps 3, c e½ nw sw 33-17s-10w 2584 3265
Greenwood County—
Chas. Hablik, Colman 1, c sw 15-28s-11e ..... • 1176
Jefferson County—
Longwell et al, Brose 1, c nw se 32-9s-20e ..... ¶3.36 1518
E. V. Jackson, Chavanne 1, c ne ne 3-10s-19e ..... • 1658
Mossbacker, VanDruff 1, c n½ ne nw 8-10s-20e ..... • 1554
Lyon County—
Jackman et al, Jones 2, 25 ft s of c w½ se se 31-21s-12e (pb 1976) .. • 2000
Marion County—
Rex-Morris et al, Cowman 1, c s½ se nw 12-17s-4e ..... • 2630
McPherson County—
W. C. McBride, Anderson 1, c n½ ne ne 21-17s-1w 745 2676
Pawnee County—
Stanolind et al, Smith "B" 1, c n½ nw ne 13-20s-16w (pb 3825) 116 3835
Pratt County—
Drillers Gas, Gerber 2, c n½ se ne 35-27s-11w (pb 3820) 3000 3923
Pryor et al, Nergner 1, sw ne ne ne 35-29s-14w (pb 4504) ..... • 4767
Reno County—
Cities Service, Kreie "C" 1, ne ne se 21-23s-10w 3000 3735
Dines, Hunter 2, c e½ nw nw 18-24s-10w 3000 3808
Rice County—
Continental, Meyer 11, nw se sw 30-18s-7w 3000 3210
Stanolind, Manke 8, 100 ft s of c s½ ne se 28-19s-10w 444 3264
Finston-Davis et al, Gum 3, c n½ se se 34-19s-10w 834 3310
Luther Mackall et al, Mitchell 2, c w½ sw se 4-20s-9w 406 3239
Vickers, Rose "A" 4, c s½ ne sw 20-20s-10w 55 3301
Rush County—
Morgan & Flynn, Crowell 3, c e½ sw ne 23-18s-16w (pb 3538) 1272 3553
Russell County—
Texas Co., Keil 4D, c e½ ne se 36-14s-14w 651 2950
Skelly, Colliver 13, c s½ se se 28-14s-13w 490 2955
J. J. Hall, Miller 28, c n½ ne sw 30-14s-13w 1341 2940
Darby, Boxberger 3, c w½ nw se 22-14s-14w 2940 3086
Cities Service, Mai "C" 2, c s½ nw se 24-14s-15w 100 3187
Zeman 1, sw sw nw 3-15s-12w .. 3000 3250
Phillips Pet., Peirano 1, c s½ sw sw 34-15s-11w ..... • 3258
Elbar Oil, Shaffer 1, sw sw ne 3-15s-13w ..... • 3310
Stafford County—
Texas Co., Gerdes 3, nw se sw 28-23s-12w 50 3862
Stanolind, Crawford 5, c w½ ne ne 15-24s-12w 2160 3822
Stevens County—
Northern Nat., Lightcap 1, ne ne nw 36-32s-37w ..... ¶30.6 2845
Woodson County—
Guy G. Harper, Figge 11, c ne sw 28-23s-14e ..... ¶25 931
OLD WELL DRILLED DEEPER
Ellis County—
Dickey Oil, Kollman 8, c s½ ne se 18-11s-17w (otd 3480) salt water disposal 3893

Kentucky

Daviess County—
Hudson et al, Morgan 1, 3-M-30 ... • 680
United Pet., Thomas 5, 5-M-30 .... 35 1005
Jack Antone, Cravens 2, 20-N-28 .. • 1363
W. Wilkins et al, Bean 1, 25-N-31. • 913
Mosely 2, 25-N-31 ..... 44 876
C. E. Daugherty, Stone 1 (3), 16-N-31 ..... 10 720
W. K. Snyder, Sutton 7, 16-N-31 .. • 1162
J. C. Barnett et al, Boswell 1 (3) 9-P-27 ..... 25 1268
Hancock County—
Leeper Oil, Rowland 2, 3-O-33 .... 5 495
McDonough & Co., Stevens 1, 13-P-33 ..... • 436
Henderson County—
Schneider & Gwin, Moss 2 (3), 25-O-25 ..... 10 698
McLean County—
Mike Callis, Thomason 2, 11-M-29. • 586
J. C. Miller, Hudson 1 (2), 17-M-29 • 1700
Ohio County—
United Pet., Lanham 1, 21-N-33 .. 6 477
Smith Miles, Grace Miles 1, 19-N-34 • 248
J. C. Miller et al's, Daily Hrs. 1 (3) 24-N-31 ..... • 829
John Tuttle, Miles 1 (2) 19N-34 .. 6 275
Union County—
Smith & Toombs, Harris 1, 5-N-21 • 1104

Louisiana Gulf Coast

Acadia Parish (Wildcat)—
Danciger, Thibodaux 1 ..... • 9512
Cameron Parish (Black Bayou)—
Shell, Watkins 47 ..... 470 7532
LaFourche Parish (Timbalier Bay)—
Gulf, State PP-7 ..... • 10015
Iberville Parish (Wildcat)—
Humble, Schwing 1-B ..... • 10380
Plaquemines Parish (Stella)—
California Co., Delta Minerals 11-B 172 7643
St. Charles Parish (Bayou des Allemands)—
Amerada, Gheens 6 ..... 308 11696
St. Mary Parish (Horseshoe Bayou)—
Texas Co., State-Horseshoe Bayou 97 10642
Terrebonne Parish (Bay St. Elaine)—
Texas Co., State-Bay St. Elaine 7-B 252 11102
Vermilion Parish (Erath)—
Phillips, Fitzsimmons 1 ..... 289 12035
Vermilion Parish (White Lake)—
Union of California, School Board 1-A 303 10032

North Louisiana

Bossier Parish (Bellevue)—
Premier Investment Co., Wyche 49, 14-19n-11w 60 425
Bossier Parish (Sligo)—
Triangle Drlg. Co., Kerr Unit A-3, 24-17n-12w 207 3151
Kerr Unit C-3, 24-17n-12w 275 3171
Clairborne Parish (Sugar Creek)—
Haynes B. Ownby, Taylor 1, 5-19n-5w ..... ¶20 5809
Caddo Parish (Pine Island)—
Fred Bowen, Stiles 1, 32-21n-16w .. • 1685
Davis & Hart, Muslow A-7, 5-20n-15w 30 1503
Claude Ferguson, Chew B-1, 4-20n-16w ..... • 2340
Kennedy & Batchelor, Muslow C-6, 5-20n-15w 50 1530
Magnolia, Doan & Thigpen 35, 6-20n-15w 52 1570
J. E. Marshall, Spell A-2, 29-21n-15w 25 1560
Stanolind, Dillon 141, 13-21n-15w .. 270 1678
Lane 2, 18-21n-14w ..... • 2368
Franklin Parish (Wildcat)—
S. J. Ryan, Womble 1, 11-12n-8e .. • 4510
Grant Parish (Wildcat)—
H. L. Hunt, Goodpine F-6, 29-8n-1e • 4273
LaSalle Parish (Cypress Bayou)—
Carter, Louisiana Delta Hdw. Co. 3, 12-6n-4e ..... • 5976
LaSalle Parish (Little Creek)—
H. L. Hunt, Goodpine F-39, 32-9n-2e 145 3684
Goodpine F-40, 29-9n-2e 140 2695
Goodpine F-42, 29-9n-2e 153 2791
Goodpine F-43, 19-9n-2e ..... • 4050
Placid Oil Co., Goodpine B-7, 29-9n-2e ..... • 3636
LaSalle Parish (Nebo)—
H. L. Hunt, Goodpine A-31, 10-7n-3e 240 4119
Goodpine F-59, 16-7n-3e 169 4522
Goodpine F-81, 33-8n-3e ..... • 4447
Placid Oil Co., Dorsey 1, 10-7n-3e 164 4120
LaSalle Parish (Olla)—
Ark. Fuel Oil Co., Tremont C-17, 34-10n-2e 130 2400
Placid Oil Co., Frost 1, 26-10n-2e.. 260 2364
Louisiana Central Lbr. Co. 107, 13-10n-2e 150 2425
Louisiana Central Lbr. Co. 112, 10-9n-2e 90 3009
LaSalle Parish (South Olla)—
Placid Oil Co., Tremont Lbr. Co. B-8, 11-9n-2e 25 2906
Tremont Lbr. Co. 10, 23-9n-2e.. 105 4002
LaSalle Parish (Trout)—
H. L. Hunt, Goodpine F-20, 25-8n-2e 207 4035
Morehouse Parish (Monroe)—
Inabnett & Pipes, Union Fee 1, 18-21n-4e ..... ¶15½ 2177
Nemours Corp., Tensas Delta 1, 22-22n-4e ..... ¶2 2196
Natchitoches Parish (Wildcat)—
E. H. Demetrio Winn 1, 25-10n-10w ..... • 1900
Winn Parish (Wildcat)—
H. L. Hunt, Goodpine F-3, 26-10n-2w ..... • 3136

Michigan

Allegan County—
Devonian Testing Co., Hanke 1, ne nw nw 35-1n-16w ..... • 1144
Bay County—
Chapman Oil Co., Wendt 1, se sw se 34-15n-4e 110 2952
Berrien County—
L. W. Lawrence, Stafford 1, ne ne sw 1-7s-17w ..... • 623
Clare County—
Taggart Bros. Co., Taylor 33, c ne 20-20n-6w ..... ¶3 1343
Gratiot County—
Sprenger Bros., Biddle 1, sw se nw 29-10n-4w ..... • 3245
Isabella County—
L. & S. Drilling Co., Brown 1, se ne ne 24-14n-6w ..... ¶1 1350
Kent County—
C. A. Perry, Brown 1, sw se nw 11-5n-12w ..... • 1868
Roscommon County—
Freeman Oil Co., State 1, c n½ nw nw 34-21n-3w 4400 3635
Osceola County—
Don Rayburn, Gabel A1, c n½ sw sw 31-18n-10w 25 3686
Van Buren County—
Clapsaddle & Harris, Allen 1, ne nw nw 12-1s-14w 20 1285
Waters 1, se se nw 18-4s-13w .. • 1136
A. S. Hoyt, Sheldon 1, se sw se 20-2s-16w ..... • 1022
Fortney et al, McElheny 1, nw nw se 12-1s-14w ..... • 1296

Mississippi

Yazoo County (Tinsley Dome)—
Hassie Hunt, G. C. Woodruff 4, 7-10n-2w 216 5580
Carl Jones, Walker 1, 2-9n-3w 768 4884
Key & Beckett, Saunders 1, 2-9n-3w 720 4962
Magnolia, M. Payne 8, 36-10n-3w .. 275 4775
Midstates Oil Corp., Cummongs 7, 31-10n-2w 504 4998
G. L. Reasor, Sorrells 4, 14-9n-2w .. 350 5046
Roeser & Pendleton, Stevens 1, 2-9n-3w 525 5011
Sylvan Oil Co., M. Payne B-1, 35-10n-3w 525 4779

Montana

Blaine County (Bowes)—
Independent Natural Gas Co., Cole 1010 cwl sw sw 2-31n-19e ..... • 827
Fallon County (Cedar Creek)—
Mondakota Dev. Co., Fee 2, sw sw nw 18-5n-61e ..... ¶½ 603
Glacier County (Cut Bank)—
Glacier Prod. Co., Nell 5, cel ne 20-33n-5w 150 2997
Wm. Hanlon, Tribal 1, se ne ne 30-32n-5w 300 2889
Hill County (Box Elder)—
Independent Nat. Gas Co., State 1007, c sw sw sw 13-32n-17e .... ¶9 1283
Liberty County (Haystack)—
Montana-Dakota Utilities Co., Oswood 1, c ne sw 18-35n-4e ..... ¶1½ 2925
Toole County (Devon)—
Frank P. Walsh, Halverson 1, c se nw 18-33n-2e ..... ¶2 728
Toole County (Kevin)—
Henry Vanderpass, Solberg 2, sw sw se 20-35n-3w ..... • 1820
Washington Oil Finding Co., Unz 1, c nw sw 9-36n-2w ..... • 2200

Nebraska

Nemaha County—
Palensky, Casey 1, c nw ne 7-5n-13e ..... • 3306
Richardson County—
Ohio, Reim et al 2, ne ne nw 18-1n-16e 236 2285
Black-Gold, Bahr 1, c ne ne 36-3n-15e ..... • 2574

OLD WELLS DEEPENED

Black-Gold, Schaible 1, c se ne 31-3n-16e (otd 2521) 33 2587
Skelly, Davisson 3, se nw ne 20-1n-16e (otd 2268) (pb 2280) 35 3399
Shaffer, Sandrock 2, ne nw sw 20-1n-16e (otd 2267) 50 2313

United States Well Completions—*Continued*

Missouri

Knox County—
Johnson Oil et al, McReynolds 1, ne ne sw 10-61n-11w ..... * 795

New Mexico

Eddy County—
Danciger, Turner 3-B, c n½ nw nw 20-17s-31e 320 3432
Flynn-Welch-Yates, Travis 3, swc se 8-18s-29e 7 2720
O. A. Roberts et al, State 4, se c 24-17s-27e 34 460
Lea County (Wildcat)—
J. W. Brown, Inc., State-Shell 1, lot 11, 4-16s-35e ..... * 5507
Lea County (Halfway)—
Argo Oil Corp., Burner-Texaco 3, c s½ sw se 9-20s-32e 480 2618
Lea County (Hardy)—
Stanolind, Hill 7-A, lot 16, 6-21s-37e 70 3780
Lea County (Maljamar)—
Barney Cockburn et al, Miller 8-A, c ne sw 23-17s-32e 42 4150
Pearsall 7-A, c se ne 33-17s-32e.. † 4075
Paul Love et al, Pearsall 2-B, c ne nw 4-18s-32e 420 3725
Lea County (Rhodes)—
Krupp-Flaherty Oil Co., Moberly 4-B, c nw sw 21-26s-37e..... 40 3305
Moberly 5-B, c se sw 21-26s-37e. 295 3306
Texas Co. et al, Moberly 2-B, c nw ne 21-26s-37e ..... ¶1.9 3415

Ohio

Ashland County—
Ohio Fuel, Holbrook 1..... * 2684
McClure 1 .....¶0.11 2800
Athens County—
Ohio Fuel, Dickson 2 .....¶0.47 900
Thompson 1 ..... * 1617
Guernsey County—
C. C. Wharton, Knight 1.....¶0.06 1136
Knox County—
Perkins & Upham, Workman 2... * 2790
Allen Willey, Nyhart 1 .....¶1.77 2933
Licking County—
Lacknett et al, Gittings 2.....¶0.28 2535
A. Willey, Glickner 2 .....¶0.59 2710
Ohio Fuel, Albright 1 .....¶ 1.0 2543
Dowler Oil, Gill 1 .....¶ 2.0 2544
Ohio Fuel, Merrill 2 ..... * 2633
Medina County—
Preston Oil, Clapp J-6..... 5 525
Clapp K-5 ..... 5 525
Clapp HO-3 ..... * 511
Conkling & Holmes, Hostetler O-13 10 506
Muskingum County—
Wittmer Co., Mock 1 .....¶ 1.0 3997
Pure Oil Co., Dickson 2.....¶ 1.6 4268
Perry County—
Ohio Fuel, Beard 1 .....¶0.37 993
R. G. Davis et al, Starkey et al 2.. 20 2709
Chartiers Oil Co., Hocking Valley 219 ..... 40 3422
Washington County—
Carpenter & Parks, Carter 1..... * 1505
S. C. Daily, Woodburn 8 .....¶0.15 1325

Oklahoma

Bryan County—
Pure Oil, Little (106) 9, sw ne sw 27-5s-7e 132 5058
Little (211) 1, sw nw se 34-5s-7e.1104 5066
Caddo County—
Texas Company, Smith 3, sw se nw 2-5s-12w 2502 3323
Geo. Pace, Davis 6, nwc sw nw 6-5n-9w 240 3427
Carter County—
Maxine Oil, Brady 8, nw sw sw ne 5-2s-2w 7 1602
L. Sikes, Eaves 7, sw se ne nw 5-2s-2w ..... * 2200
Cotton County—
Barnsdall Pet., Lawlen 7, ne sw ne 33-1s-10w 15 2280
Creek County—
Tibbins, Harry "A" 3, nw nw nw 9-14n-10e 143 3192
Sinclair Prairie, Dacon 42, 30 ft n of c e½ ne 5 2740
Berryhill 28, ne se nw 16-17n-12e 15 1550
Kiefer 44, 295 ft e of se ne se.Input 1442
Garvin County—
Skelly Oil, Partin 3, sw sw sw 28-1n-3w 24 2080
Grant County—
Texas Co., Breinholt 1, c e½ nw sw 36-25n-3w ..... * 5720
Jefferson County—
H. F. Gibson, Noah 1, c nw ne 25-3s-5w ..... * 3395
Kiowa County—
H. J. Sherman, Watkins 6, ne sw nw 20-7n-17w 200 1129
Latimer County—
LeFlore, Gallagher RO-44, se se se 11-6n-21e (pb 1839) .....¶ 1.5 1982
Logan County—
Atlantic et al, O'Hara 1, c w½ ne nw 18-17n-2e ..... * 4978
McBride, Eastwood 4, sw nw sw 7-17n-1w 40 5495
Sunray et al, McLeod 1, ne ne se 12-17n-2w (pb 5175) 120 5505
Muskogee County—
Viersen Drlg., Finkler 1, c sw nw 16-11n-19e ..... * 963
McNutt & Young, Tabor 1, ne sw se sw 36-13n-16e ..... * 2190
Simmons Roy, Jackson 1, sw sw sw 8-14n-16e ..... * 1832
Okfuskee County—
W. A. Flemming, Robinson 1-A, 1-10n-11e ..... * 1710
Portable Drlg., Dill 1, ne ne ne 12-11n-8e ..... * 4132
Okmulgee County—
Wood Oil, McAdoo 1, se c ne 28-13n-13e 40 1749
Dodge, Herrod 21, ne se sw se 17-15n-14e 4 836
Osage County—
Texas, DeNoya 5, sw se sw 11-26-6e 83 2889
J. Schwartz 3, nw sw sw ne 16-23n-9e 6 2170
F. M. Pinny 8, 140 ft s c n½ se 15-24n-8e 56 2300
Stanolind, 6, c w½ nw sw 17-27n-8e 300 2506
Anderson-Prichard, 1, sw ne sw 32-28n-8e (pb 2535) 13 2544
Pontotoc County—
R. M. Love, Newlund 1, sw nw ne 15-4n-6e 15 835
Pottawatomie County—
Culver & Shephard, Waite 4, sw sw ne 9-5n-5e 10 2709
Denver P&R, Decker 3, sw se se 8-7n-4e 300 4049
Sinclair Prairie, Rice "B" 2, se nw ne 17-7n-4e 574 4215
Stanolind-Amerada, Rown 1, ne nw sw 20-9n-4e (pb 4814) ..... * 5162
Billington "C" 2, se se ne 26-9n-4e 243 4412
Seminole County—
Amerada, Vulgamore 1, c n½ sw se 30-9n-6e 58 4287
Shell Oil, Kinslow 1, ne ne sw 22-11n-8e 69 4210
Stephens County—
Geo. Pace, Marx "B" 1, nw sw ne se 13-2s-8w 7 1980
Razin Bros., Dilley 1, ne sw se 6-3s-5w ..... * 1197

Pennsylvania

Bradford District—
Triple Oil Co., fee ..... 1 ..
Matthew Lippert et al, Lippert .... 7 ..
Roggenbaum Bros., McCaffery .... ½ ..
Miller Bros., fee ..... 5 ..
N. V. V. Franchot, Mgrs., Trustee, Harbel & Meridan ..... 4 ..
Wood & Armstrong, fee ..... 1 ..
Quinlan Bros., Redfield ..... 3 ..
P. & L. Oil Co., Duke & Taggert.. ½ ..
D. W. Daly No. 2, Bing 467-94.... 1 ..
H. E. Canis Estate, No. 2, Lamb.. 2 ..
Dallas Oil Co., Ekas ..... 2 ..
Bradford Transit Co., 23 wells... 23 ..
Forest Oil Corp. ..... 1 ..
Forest Petroleum Corp. ..... 1 ..
Niagara Oil Corp., 4 wells ..... 4 ..
Water Intake—
Mix Creek Oil Co., fee ....
Esther Oil Co., Inc., Lamton..... .. ..
Melvin Towne Oil Co., fee..... .. ..
Andrus, Lens & Daggett, Newton .. ..
Forest Oil Corp., 2 wells ....
Forest Pet. Corp., 2 wells ....
Niagara Oil Corp., 2 wells ....
New York-Penna Gas Field—
Harold French, Frank Eaton .... * ..
Middle District—
Milton Strong Oil Co., fee ..... ½ ..
United Natural Gas Co., Miller... ¶ ..
H. L. Helscel, fee ..... 1 ..
Shoup & Vensel, fee ..... 2 ..
S. Y. Ramage, Jr., Henderson .... 1 ..
J. H. Jones, Shipman ..... ½ ..
Pressure Wells—
N. V. V. Franchot, Lot 107, 2 wells .. ..
Butler-Armstrong District—
Burnett & Hutchison, A. & F. Eichenauer ..... * ..
Smith et al, Charles Hoffman .... * ..
Willis M. Ruby, Jacob Snyder.... ¼ ..

SOUTHWEST DISTRICT

Armstrong County—
James Wright, Wright 1 .....¶ 1.6 1825
Apollo, Riggle 1 .....¶0.25 1615
Greene County—
Lewis Petit et al, Murray 1..... * 3375
J. B. Myers et al, Milliken 1.....¶0.11 3211

Texas Panhandle

Gray County—
Clayton-Dwyer Drl. Co.-J. L. Mc-Mahon, Lovett 4 ..... 216 2926
Lovett 5 ..... 324 2975
Lovett 6 ..... 768 2988
Danciger O&R, Inc., Powell-Beck 22 ..... 268 2851
Nabob O&G Co., Morse 8-A..... * 2830
Phillips, M. Davidson 2..... 391 3128
Skelly, Lovett 2 ..... 238 2959
Schafer 134 ..... 276 3280
W. H. Taylor et al, Taylor 4..... 264 2957
Texwell Oil Corp., M. Davidson 3.. 336 3037
Hutchinson County—
Cree & Hoover, Haile 11..... 151 3025
Gulf & Panhandle, Dial 106..... 258 2930
Holmes et al, Moore-Langdon 5-A.. 342 3105
J. M. Huber Corp., Weatherly 16.. 399 3085
Harry Steckoll et al, Whittenburg 7-A 70 2875
Cy. Reiger et al, Whittenburg 1.. 66 2676
Shell, Harvey Sisters 32-B..... 320 3038
Texas Co., Lewis 38..... 33 2970
Sherman County—
Cities Service, Calvird 1 (pb 2883).. ¶48 4014

North Texas

Archer County—
Phillips Pet. Co., Miller-Chauncey 1 52 4027
Archer County (Scotland)—
Shell, D. Coleman 2-G 1372 5160
Archer County—
Cox & Jake Hamon, Little-Big 8.. * 1331
E. V. Morgan-R. C. Turner, Carr 11 30 1418
Carr 12 ..... 30 1425
W. F. Palmer et al, Richardson 1-B * 1333
J. J. Perkins-Prothro Co., Farmer 1-C ..... * 1421
Rathke Oil Co., Roach 1 ..... 9 1283
Roach 2 ..... 9 1279
C. E. Rodgers et al, Carter 1 ..... * 1154
Shappell Oil Co., Bell 26 ..... 40 1006
Bell 27 ..... 20 1007
Bell 29 ..... * 993
Pet. Producers Co., Richardson 7-B 20 1272
Archer County (Wildcat)—
John R. Chandler et al, Abercrombie 1 ..... * 1500
Clay County (Antelope)—
Shell, H. Henderson 14 .....1122 3183
Clay County (Ross-Jolly)—
Continental et al, Ross 5..... 916 5479
Clay County—
Akin-Dimock-Costley, Saner 1-A... * 1181
Saner 1-B ..... * 1205
E. N. Costley et al, Taylor 3-B.... * 1293
C. Y. Gorman et al, Taylor 11.... 40 1130
Johnson & Kouri, Taylor 7 ..... 35 1131
Perkins & Cullum, Taylor 2-B.... 144 1046
Clay County (Wildcat)—
Superior, Seigler-Shell 1 ..... * 6455
Cooke County (Walnut Bend)—
Sinclair Prairie, Atkins 7..... 347 4976
Cooke County—
High Point Oil Co., Fette 4..... 15 1112
Trumter Oil Co., Andress 23-B.... 18 776
Whitfield-Pearson-Grimes, Voth 16 * 1853
Jack County (Wildcat)—
F. Kirk Johnson-Ambassador Oil Corp., Shawver 1 ..... * 6185
Jack County—
B. C. Gilmore et al, Moore 5 ..... 4 474
G. M. Gillespie et al, Rhodes 1... 156 3190
Montague County—
Bridwell Oil Co., Bagley 2-D 6 837
Montague County (Clingingsmith)—
Sinclair Prairie, Lemon (pb 5990)..3618 6680
McCall 1 (pb 5980) 2981 6949
Throckmorton County—
Consolidated Oil Co., Cook 1..... * 1003
Walter Neudstadt et al, McKeichan 7 ..... 8 670
Wichita County (K-M-A Ellenberger)—
Shell & Phillips, Griffin 32-E 56 4374
Griffin 34-E 2628 4360
Tide Water Associated et al, Pettit 3-E 640 4258
Chas. Pettit 11-E 712 4325
Venmex Oil Co., Griffin 1-A-E....1464 4383
Wichita County (K-M-A)—
W. H. Hammon, Hanlon & Buchanan, Fassett-Tuttle 38 ..... 552 3980
Huckleberry & Cline, Stone 4 (pb 3628) 456 3726
Wichita County—
Johnston Bros. et al, Cooper 1 .... * 1377
R. G. Drl. Co., Warren 1..... 116 1497
Warren 2 ..... 75 1761
Rubsam-Switzer-Widner, McClure 22-A 27 1313
Wilbarger County (Fargo)—
Amerada, Dodson 1-C (pb 4060)... 320 4670
Humble, Anderson 4 ..... 70 4665
Wilbarger County—
Consolidated Oil Co., Ancell 5-B.. 72 1764
Young County—
W. F. Collins & Riley, Porter 2... * 721
E. L. Orr et al, Spencer 1 ..... * 877
Panhandle, Guinn-Texaco 2 ..... * 2815
Young County (Wildcat)—
Panhandle, Allar Co.-Hunt 1..... 76 2711

United States Well Completions—*Continued*

West Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Andrews County (Emma)—		
Montecito Oil Corp., Cowden 5	1409	4263
Cochran County (Slaughter)—		
Devonian Oil Co. et al, Duggan 9-B-18	985	5070
Crane County (Jordan)—		
Texas Co., University 7-A	927	3580
Crockett County (Soma-Noelke)—		
M. & M. Production Co., Noelke 1-H	561	1062
Wilshire Oil Co., Harter 1	576	1243
Thompson 2	*	1712
Crockett County (World-Powell)—		
L. H. Armer et al, Powell 1-X	135	2616
Ector County (Foster)—		
Cities Service, Johnson 4-A	281	4200
M. J. Delaney et al, Johnson-Conoco 6-A	1650	4145
Ector County (Jordan)—		
Parker Drl. Co., Pace 2	528	3702
Ector County (North Cowden)—		
Carl B. King Drl. Co., Holt-Landreth 1-A	415	4376
Gaines County (Cedar Lake)—		
Stanolind, American Warehouse 7	573	4761
Gaines County (Seminole)—		
Amerada, Austin 7	729	5255
Hockley County (Slaughter)—		
Devonian Oil Co., Mallet 2	1325	5031
Honolulu Oil Corp., Mallet 21-B	1581	4991
Magnolia, Mallet 5-E	880	5020
Sid Richardson et al, Slaughter 14, lab 8	723	4985
Stanolind, Slaughter 13-A	1524	5030
Texas Co., Slaughter 36	1110	5010
Hudspeth County (Wildcat)—		
Haymon Krupp O&L Co., Briggs 1	*	6226
Mitchell County (Northwest)—		
G. R. Anderson Drl. Co., Simpson 1	*	1802
H. H. Simons et al, Strain 1	149	1760
Pecos County (Abell)—		
Magnolia, Silverman-State 3	1632	5388
Pecos County (Walker)—		
W. H. Burleson et al, White-Baker 1-B	126	2122
Childress Roy. Co., White-Baker 5-A	*	1945
Cities Service, White-Baker 1-A	154	1918
J. H. Lewis & Engle, White-Baker 2-B	53	2171
Scurry County (Sharon)—		
L. L. Lookabaugh-T. S. Schroeder, Richter 1	*	2547
Richter 2	*	2541

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PHILADELPHIA

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Company, Well and Location	Init. Prod. Bbls.	Depth
Upton County (Gulf-McElroy)—		
Gulf, McElroy 255	578	3002
McElroy 256	173	3150
Upton County (McCamey)—		
Jameson & Pollard, Shirley 1-B	*	2507
Ward County—		
Gulf, G. W. O'Brien 186	188	2670
G. W. O'Brien 187	1035	2800
G. W. O'Brien 188	1452	2777
Hutchings 161	2245	3075
Magnolia, Sealy 3-42	325	2940
Sinclair Prairie, Archenhold 31	362	2980
Texas Co., University 8-E	252	2680
Winkler County (Keystone)—		
R. Lowe et al, Campbell-Texaco 8	211	3264
Richardson Oils, Inc., Walton 6	314	3392
Tide Water Associated, Campbell 2	174	3345
Texas Co., Campbell 6	300	3270
Yoakum County (Wasson)—		
Aloco Oil Co., Keller-Texaco 13	292	5212
Moore-Texaco 7 (pb 5202)	191	5400
Randall, Texaco 5	463	5262
Drl. & Explo. Co., Hudson-Shell 2-A	414	5105
OLD WELL DEEPENED		
Upton County (McClintic)—		
T. P. Coal & Oil Co., Eddleman 3 (otd 3176)	146	3244

East Texas

Company, Well and Location	Init. Prod. Bbls.	Depth
Kilgore Area—		
R. H. Dearing & Son, Laird 4	264	3574
Shell, B. F. Laird 36-A	2400	3581
B. F. Laird 37-A	2000	3579
Wheelock & Collins, Wells 25	1500	3633
Longview Area—		
Atlantic Ref. Co., Tuttle 12-A	3000	3661
Great Plains Oil Co., Anderson 6	900	3625
C. A. Lee-R. W. Burnett, Green 1	408	3718
Selby O&G Co.-Lewis Prod., Snavely 33-A	1500	3565
Anderson County (Long Lake)—		
FHE Oil Co.-Carter-Gragg Oil Co., Palestine 2-B	¶115	5367
Tide Water-Seaboard, Alex Samuel 1	88	5342
Franklin County (Talco)—		
M. Crichton et al, Haydon-Sun 2	*	4338
Humble, Dawson 15	648	4298
Houston County (Grapeland)—		
Grapeland Oil Co., Herrod-Finch 2	¶115	5993
Rockwell County (Wildcat)—		
City of Rockwell, Fee 1	*	3347
Wood County (Hawkins)—		
Humble, F. Bell 1 (17.15-ac)	270	4846
E. Dagnell 2 (141.47-ac)	494	4622
E. M. Slaughter 1-B (90½-ac)	326	4815
T&P Ry. Co. 4 (63½-ac)	449	4832
C. L. McMahon et al, Snider 1 (37-ac)	319	4802
Navarro Oil Co., Maberry 4 (100½-ac)	360	4745
Loyce Phillips et al, M. Snider 1 (62.14-ac)	396	4789
Marion County (Smithland-Pine-Island)—		
H. H. Groneman, M. D. Hart 1, M. G. Nall sur	*	2140

Southwest Texas

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bee County (Wildcats)—		
Shield et al, McKinney 1	*	4515
Sun & Arkansas, Baird 1	*	4565
Hidalgo County (Nichols)—		
Phillips, Yturria 1	250	3975
Jackson County (Ganado)—		
Texaco, Ross 2	300	6700
Jackson County (LaWard)—		
Magnolia, Vordick 1, outpost	¶5	5247
Jackson County (Lolita)—		
Cox & Hamon, Scherffuis 2	350	5955
Magnolia, Four-Way Ranch 5	600	5950
Jackson County (West Ranch)—		
Magnolia, West 164-A	500	5524
West 198-A	450	5570
West 200-A	500	5770
Jim Wells County (LaGloria)—		
LaGloria, Unit 16, dual sand	¶100 & 300	6900
Magnolia, D. O. Maun 2 (was LaGloria 18)	¶60 & 800	6901
Nueces County (Agua Dulce)—		
Sam Wilson & Gulf Plains, Rivers 1	500	7114
Nueces County (S. Clara Driscoll)—		
Texas Conservative, Huie 8	¶20	5480
Nueces County (Stratton)—		
Chicago Corp., Wardner 22	600	6650
Hiawatha, Rogers 1	¶50 & 200	8138
Refugio County (Refugio)—		
Satex, Mitchell 8-B	70	6432
Refugio County (Wildcat)—		
Rutherford and Waldron, Avery 1	*	6559
San Patricio County (Odem)—		
Seaboard, Smith 2	550	5433
Victoria County (N. McFaddin)—		
Transwestern, McFaddin 1-F	¶10	5233
Victoria County (Placedo)—		
Barnsdall, J. Pickering 15	400	6067
OLD WELL DEEPENED		
Jim Wells County (Premont)—		
Magnolia, Seeligson 2 (otd 3255)	*	4905

SAN ANTONIO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bexar County (Gas Ridge)—		
Southwest Dr. Co., Covel 30	3	482
Caldwell County (Tenney Creek)—		
Wiegand Bros., Hill 4	250	2688
Caldwell County (Wildcat)—		
Fred Adams, Bankers Life 1	*	1981
Milam County (Minerva Rockdale)—		
H. H. Coffield, Dymke 2	*	1526
Lowenstein Est. 1	*	1586
Wilson County (Wildcats)—		
Shell, Johnson 1	*	496
Wells 1	*	5000

LAREDO DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Duval County (Lundell)—		
Government Wells Oil Co., Lundell 59	*	1586
Duval County (Piedre Lumbre)—		
Magnolia, DCRC 31 (100)	75	2133
Duval County (Wildcat)—		
R. Benjamin, Bain 1	*	1900
Duval County (Palangana)—		
F. J. Gravis, Schallert 1	*	2895
Duval County (Sejita)—		
Trinity Gas Co., Casey 2	¶35 & 200	5887
Jim Hogg County (Colorado)—		
Humble, King-Colorado 36-B	400	3055
Neuhaus et al, Trevino 9-C	*	3148
Starr County (Kelsey)—		
Navarro, Trevino 1	650	4806
Starr County (Rincon)—		
Continental, Slick 104-A	550	4250
Webb County (Wildcats)—		
Cash & Reynolds, Kirkpatrick 1	*	2590
Magnolia, Santos Tomas 1	*	6830

Texas Gulf Coast

Company, Well and Location	Init. Prod. Bbls.	Depth
Brazoria County (Chenango)—		
Stanolind, Brundrett 2	*	8603
Brazoria County (Old Ocean)—		
Harrison & Abercrombie, BRLD 2-C	400	10855
Chambers County (Wildcat)—		
Dick Schwab, Ferrell 1	*	8015
Chambers County (Anahuac)—		
Humble, Boyt 9	643	7105
Galveston County (Gillock)—		
Pan American, Stewart 15	189	8689
Hardin County (Batson)—		
Ada Belle, Davis 303	*	909
Harris County (Dyersdale)—		
Jess Frazier, Dwyer 5	*	4150
Jefferson County (Fannett)—		
Gulf, Junker 9	¶	8128
Orange County (Port Neches)—		
D. D. Feldman, Todd Roy. Syn. 1	*	3727
Orange County (West Port Neches)—		
Texas Co., Polk 11-B	*	6600
Matagorda County (North Markham)—		
Ohio Oil, Carlson 10	209	8137
Walker County (Wildcat)—		
Mike Hogg, Smith 1	*	7285
Wharton County (Withers)—		
F. W. Michaux, Pierce Est. 14-A	178	5390

Utah

Company, Well and Location	Init. Prod. Bbls.	Depth
Grand County (Sandburg)—		
Sandburg Petroleum Co., Government 1, se ne sw 7-21s-19e	*	2470

West Virginia

Company, Well and Location	Init. Prod. Bbls.	Depth
Boone County—		
Owens, Libby-Owens, Little Coal Land Co.	¶0.12	1879
Allen & Pryor 34	¶0.20	2528
Clay County—		
Va. Gasoline & Oil Corp., Brown, Swann & Goshorn V1302	15	1762
Gilmer County—		
McCall Drlg. Co., Arbuckle	*	1677
Pittsburgh & Wa. Va. Gas Co., West	¶0.43	1970
Jackson County—		
Columbian Carbon Co., Kent 1	¶2.76	4959
Hayes Oil & Gas Co., Hill 2	¶9.48	4988
Spartan Gas Co., Boggess 1	¶ 4.5	4994
Kanawha County—		
O. D. Hill, Jr., Fisher 1	¶3.13	4804
Columbian Carbon Co., Fogarty 1 (not shot)	¶0.03	5042
Pleasants County—		
B. C. Deem, Jr., Sigler 1	¶ 0.2	1851
Putnam County—		
Randolph Gas Co., Craddock 1	¶0.09	2289
E. J. Elkins et al, Chaney 1	¶0.01	2182
Taylor County—		
Pittsburgh & W. Va. Gas Co., Baker 6121	¶0.25	730
Wirt County—		
Newark Oil Co., Exline 1	*	1295

Wyoming

Company, Well and Location	Init. Prod. Bbls.	Depth
Fremont County (Maverick)—		
Indian Oil Co., Tribal 3, nw sw nw 23-6n-2w	920	1652
Kirk Oil Co., Tribal 5, c ne se 22-6n-2w	250	1378
Weston County (Osage)—		
A. R. Smith, Fee 17, ne nw sw 30-46n-63w	20	1436
Wyoming O&G Co., Goverment 23, nw sw se 19-46n-63w	8	1458

WILDCAT REPORT
New Starts and Completions

CALIFORNIA

FIRST REPORTS

Kern County—Tideland Oil Co.'s Grant Estate 1, 4-27-18, Shale Hills area, lcn.

Los Angeles County—Union's Sansinena 13, 30-2-10, Whittier-LaHabra area, lcn.

Orange County—La Bolsa Rancho Oil Synd.'s No. 1, 22-5-11, Bolsa Chica area, lcn.

Ventura County—A. T. Denison's No. 1, 13-4-21, Timber Canyon area, lcn.

COMPLETION

Kern County—Union's Morgan 81-14, 14-31-26, abnd 11,456 ft in Eocene.

COLORADO

FIRST REPORT

Moffat County—Great Divide Pet. Co.'s Wyatt 1, nw nw se 6-9n-92w, Iron Springs, flowing water drill stem test 1700 ft.

FLORIDA

COMPLETIONS

Dade County—Wm. G. Blanchard, Everglades 2, ne nw 31-53s-35e, elev 9 ft, 10-in csg 450 ft 6⅝-in csg 1272 ft, perf 1240-50 ft, tested water with sulphur odor, abnd 1280 ft. (Location 150 ft ne of same operator's Everglades 1, now sd 2560 ft hd lime).

ILLINOIS

FIRST REPORTS

Bond County—Bond County Gas Co.'s Faires 1 ne sw sw 26-6n-3w, lcn.

Clinton County—J. D. Tinley et al's Bennett 1, ne se ne 36-3n-2w, dr.

Crawford County—Kemp & Dailey's Lewis et al 1, 3½ nw nw 9-6n-13w, lcn.

Edwards County—H. K. Riddle's Toop 1, s½ nw sw 17-2s-14w, lcn. Central P. L. Co.'s Kent-Stremme 1, n½ se ne 31-2n-14w, lcn.

Franklin County—Byers' McIntyre 1, ne se sw 36-6s-3w, lcn.

Gallatin County—Delta Drlg. Co.'s Doherty 1, c n½ nw se nw 24-8s-9e, lcn.

Hamilton County—Cherry & Kidd's Gardner 1, c se se ne 24-3s-7e, dr.

Jasper County—Great Lakes Drlg. Co.'s Douthit 1, e½ se nw 16-5n-8e, lcn. Shulman Bros.' Prudential Life Co. 1, s½ nw se 6-6n-10e, lcn.

Lawrence County—DeKalb Oil Co.'s King 1, s½ sw ne 8-2n-12w, dr.

Marion County—Roy Dodd's Statler 1, ne ne nw 9-1n-1e, lcn.

Richland County—R. B. Martin's Deischer 1, e½ nw sw 26-2n-10e, lcn.

Wayne County—Bell Bros.' Fuhrer 1, no spot 33-1s-6e, lcn.

White County—Morrison & Noe's Robinson 1, ne sw se 22-3s-10e, dr.

COMPLETIONS

Bond County—Fox & Conroy's Buckele 2, se sw nw 11-4n-2w, abnd 1389 ft.

Clay County—Rockhill Oil's Duff 1, nw sw sw 20-3n-8e, Cyp. 2681-93 ft, Bethel 2874-90 ft, td 2909 ft, 107 bbls oil. B. F. Williams' Keck 1, ne ne sw 35-4n-7e, Tar Springs 2316-23 ft, 100 bbls water and 57 bbls oil pump.

Clinton County—L. Lillie et al's Sheppard 1, sw sw nw 25-3n-2w, abnd 1305 ft. Paul Doran et al's Kell 1, sw sw nw 36-3n-2w, abnd 1245 ft.

Gallatin County—N. V. Duncan, Inc.'s Greer 1, se se se 35-7s-9e, abnd 3042 ft.

Jackson County—W. E. Sheals et al's Williams Est. 1, ne ne sw 33-7s-1w, abnd 2319 ft.

Jefferson County—Harding & Harlowe's McMurran 1, ne nw ne 26-1s-3e, abnd 708 ft.

Lawrence County—Big Four O&G's L. Gulispie 35, n½ sw se 26-3n-12w, (otd 1820), abnd 3365 ft.

Marion County—Swan-King's Kotva Hrs. 1, s½ sw nw 36-4n-2e, McClos. 2082-2113 ft, td 3692 ft, 219 bbls oil.

Richland County—Anderson & Fields' Higgins 1, ne ne nw 35-2n-14w, abnd 3023 ft. J. S. Young's Gerhart 1, s½ se se 20-4n-10w, abnd 1700 ft.

Wayne County—New Penn Dev. Corp.'s Harriss 1, w½ ne nw 31-2s-9e, abnd 3385 ft.

Franklin County—R. A. Grady & Daniels' Fitzgerrell 1, se se ne 28-5s-3e, abnd 3050 ft. Mohawk Drlg.'s Stewart 1, ne ne ne 11-6s-2e, McClosky 2789-2794 ft, 65 bbls water, 500 bbls oil.

Gallatin County—Angle & Angle's Daley 1, se nw sw 25-8s-9e, abnd 2864 ft.

Jefferson County—Bell Brothers' Osborn 1, se se ne 25-2s-4e, abnd 3250 ft.

LaSalle County—Elko O & G's Duncan 1, se ne nw 27-33n-1e, abnd 1200 ft.

Wabash County—Wabash Oil & Gas' Carrie 1, ne sw ne 31-2n-12w, abnd 2445 ft.

Wayne County—Pure's Marshall "A" 1, c w½ sw nw 16-1s-8e, abnd 3257 ft. Pioneer Drlg. et al's Schell 1, c n½ nw sw 25-1n-6e, abnd 3224 ft.

INDIANA

FIRST REPORTS

Daviess County—L. L. Benoist's Brewer Heirs 1, se sw se 33-2n-5w, lcn.

Morgan County—C. E. Jefferson's Brown 1, nw c ne 16-13n-1w, lcn.

Pike County—Irwin & Powderly's McAtee 1, nw nw nw 33-1n-9w, lcn.

Posey County—Haines & Thomas' Schearer 1, c n½ ne nw 13-7s-13w, lcn.

Spencer County—Ken-Pen's Metz 1, ne nw sw 10-6s-7w, lcn.

White County—National Pet. Co.'s Brown 1, nw ne nw 16-28n-4w, lcn.

COMPLETIONS

Hamilton County—Hamilton Co. Oil's Nelson 1-A, nw ne sw sw 13-19n-3e, Trenton 1052 ft, td 1056 ft, 30 bbls oil.

Posey County—Chas. Loveless et al's Daussan 1, ne nw ne 25-6s-13w, abnd 1200 ft. Central States Oil's Seifert 1, nw nw nw 30-6s-12w, Mansfield 1079 ft, td 1105, pump 452 bbls oil.

Newton County—Palmer Corp.'s Henkle 1, se se se 36-30n-9w, owd 485 ft, td 1001 ft, abnd.

Orange County—U. S. Oil Co.'s Willyard 1, nw ne sw 33-1n-1w, owd, otd 600 ft, abnd 1516 ft.

Posey County—Morgenstern Oil's Mentzger 1, c sw nw ne 34-5s-14w, abnd 3037 ft.

Vigo County—Kraus et al's Hollenbeck 1, c sw ne 14-10n-8w, abnd 1895 ft.

IOWA

FIRST REPORT

Montgomery County—Ohio Oil's Peterson 1, c se se 5-72n-38w, lcn.

KANSAS

FIRST REPORTS

Barton County—Central Pet. et al's Unruh 1, c e½ se se 9-20s-15w, lcn. W. C. Jackson et al's Brewer 1, c w½ sw ne 23-20s-15w, surface hole.

Cowley County—Trees Oil's Deichman 1, nw nw sw 24-31s-4e, lcn.

Edwards County—Stanolind's Arensman "A" 1, c s½ ne se 23-25s-19w, cellar.

Graham County—R. W. Shields et al's Belveal 1, c e½ se ne 9-8s-24w, mim.

Jefferson County—W. D. Dunn et al's Everett 1, se se sw 36-8s-19e, dr. Ray Raderson's McLeod 1, c se sw 17-9s-20e, dr.

Leavenworth County—Mosbacher et al's Doleman 1, nw nw se 27-9s-20e, dr. Mosbacher et al's Bell Est. 1, nw ne ne 12-10s-20e, dr. A. & B. Pipeline's Corlett 1, c sw ne 19-10s-21e, mim.

Pratt County—A. R. Jones et al's Eubank 1, c n½ ne nw 11-27s-14w, rig. Luther P. MacKall's Thornton 1, c e½ se nw 14-29s-13w, dr.

Rooks County—Churchill Oil's Griffin 1, c ne ne 25-8s-16w, pits.

Sedgwick County—A. M. Landon's Gray 1, nw nw ne 15-22s-2e, dr.

COMPLETIONS

Greenwood County—G. A. Fuller et al's Baker 1, c e½ ne sw 17-26s-13e, Oswego 1083 ft, Mississippi 1501 ft, td 1537 ft, abnd.

Pottawatomie County—Max Cohen's Dacker 1, nw sw nw 12-8s-10e, Mississippi 1418 ft, Hunton 1874-1926 ft, abnd.

Pratt County—Skelly Oil's Henderson 1, ne ne sw 2-26s-14w, Lansing 3799 ft, Mississippi 4225 ft, Viola 4303 ft, Simpson shale 4394 ft, Simpson sand 4403 ft, Arbuckle 4485-4515 ft, abnd.

Russell County—Central Pet. et al's Hilgenberg "B" 1, c s½ se ne 18-15s-12w, Congl. 3304-3310 ft, Arbuckle 3310 ft, 2500 gals acid, td 3324 ft, pb 3322 ft, show oil & considerable water, abnd.

Butler County—Allison & Phillips Pet.'s Porter 1, nw ne nw 25-28s-8e, Miss 2547 ft, Arb 2915-19 ft, td 2919 ft, 50 bbls oil.

Barton County—Helmerich & Payne's Smith 1, nw nw sw 17-20s-15w, abnd.

Cowley County—Steinbuchel & Berger's Peck 1, nw nw se 23-34s-5e, Lansing 2235 ft, Miss 2973 ft, abnd 3010 ft. Marylyn Oil's Mosier 1, nw nw sw 21-34s-7e, Kansas City 2553 ft, abnd 2710 ft.

Jefferson County—E. V. Jackson's Chavanne 1, c ne ne 3-10s-19e, sandy slate 1524-27 ft, Bartlesville 1654 ft, Miss 1595-1658 ft, abnd.

Marion County—Rex & Morris et al's Cowman 1-A, c s½ se sw 12-17s-4e, Miss 2365 ft, Base Miss 2448 ft, Hunton 2615 ft, td 2615 ft, abnd.

Pratt County—Pryor & Lockhart et al's Bergner 1, 35-20s-14w, anhy 778 ft, Lansing 4014 ft, Simpson 4580 ft, Arbuckle 4670 ft, td 4774 ft, pb 4620 ft, pb 4504 ft, no show, abnd.

Russell County—W. O. Allen's Stoskopf 1, ne ne ne 29-16s-13w, Lansing 3147 ft, Arb 3373-75 ft, td 3390 ft, pump 35 bbls oil gr 35.

KENTUCKY

FIRST REPORTS

Daviess County—Ankeny & Gibson's Thorp 1 (3) 1-M-29, lcn.

Hancock County—Henry Scholl's Parrott 1 (8), 17-P-33, dr.

COMPLETIONS

McLean County—J. C. Miller's Hudson 1, (2) 17-M-29, abnd 1700 ft.

Union County—Smith & Toombs' Harris 1, 5-N-21, abnd 1104 ft.

Daviess County—Hudson et al's Morgan 1, 3-M-30, abnd 680 ft.

Ohio County—Smith Miles' Grace Miles 1, 19-N-34, abnd 248 ft.

SOUTH LOUISIANA

COMPLETIONS

Acadia Parish—Danciger's Thibodaux 1, West Church Point area, in sec 73-7s-2e, td 9512 ft, ran electrical log, abnd.

LaFourche Parish—Gulf's State PP-7, Timbalier Bay area, 15 mi n of Timbalier Bay fld, td 12,905 ft, ran electrical log 10,015 ft, abnd.

Iberville Parish—Humble's Schwing Lbr. & Shingle, Bayou des Glaise area, 6200 ft s of abnd dis well, td 10,380 ft, abnd.

NORTH LOUISIANA

FIRST REPORTS

Grant Parish—H. L. Hunt, Goodpine F-4, se nw 16-8n-1e, rig. Goodpine F-7, ne nw 24-8n-1w, dr.

Natchitoches Parish—H. L. Hunt, Goodpine-Government 1, sec 36-13n-6w, rig (7500 ft test).

Tensas Parish—A. Z. Phillips, Gentry 1, sec 22-12n-12e, dk & mir.

COMPLETIONS

Franklin Parish—S. J. Ryan, Womble 1, se nw 11-12n-8e, top Cockfield 530 ft, Cook Mountain 1195 ft, Sparta 1360 ft, Cane River 2185 ft, Wilcox 2595 ft, abnd 4510 ft.

Grant Parish—H. L. Hunt, Goodpine F-6, se nw 29-8n-1e, Wilcox 1700 ft, abnd 4273 ft.

Natchitoches Parish—E. H. Demetrio, Winn 1, se nw 25-10n-10w, chalk 1770 ft, abnd 1900 ft.

Winn Parish—H. L. Hunt, Goodpine F-3, sw nw 26-10n-2w, abnd 3136 ft.

MICHIGAN

FIRST REPORTS

Allegan County—Clapsaddle & Harris' Maistrom 1, nw sw nw 19-1n-15w, dr.

Mecosta County—American Prod. Co.'s Trust 1, se nw sw 24-16n-9w, dr.

Roscommon County—Sun's Hunt 1, c w½ nw nw 29-23n-4w, rig.

COMPLETIONS

Allegan County—Devonian Testing Co.'s Hanke 1, ne nw nw 35-1n-16w, Traverse 1121 ft, abnd 1144 ft.

Berrien County—L. W. Lawrence's Stafford 1, ne ne sw 1-7s-17w, abnd 623 ft.

Gratiot County—Sprenger Bros.' Biddle 1, sw se nw 29-10n-4w, abnd 3245 ft.

Kent County—Clifford Perry's Brown 1, sw se nw 11-5n-12w, Traverse 1860 ft, abnd 1869 ft.

Van Buren County—Clapsaddle & Harris' Waters 1, se se nw 18-4s-13w, Traverse 1132 ft, abnd 1136 ft.

MISSOURI

COMPLETIONS

Knox County—Harris & Holmes' Newkirk 1, ne ne ne 11-61n-11w, Mississippi 200 ft, Burlington 200-50 ft, Base Mississippi 377 ft, Kinderhook 377 ft, Hunton 588-653 ft, abnd. Johnson Oil's Early 1, nw nw se 1-61n-12w, Base Mississippi 230 ft, Kinderhood 230-410 ft, Hunton 410 ft, Viola 577 ft, Simpson 638 ft, St. Peter 664 ft, Arbuckle 750 ft, td 804 ft, abnd.

Knox County—Johnson Oil's McReynolds 1, ne ne sw 10-61n-11w, Hunton 445 ft, Viola 590 ft, St. Peter 683 ft, abnd 795 ft.

MONTANA

COMPLETIONS

Liberty County—Montana Dakota Utilities Co.'s Oswood 1, c ne sw 18-35n-4e, gas strike, 1,500,000 cu ft initial perforations 2190-2240 ft in Colorado, td 2925 ft.

Toole County—Washington Oil Finding Co.'s Unz 1, c nw sw 9-36n-2w, East Sunburst, abnd 2200 ft.

NEBRASKA

FIRST REPORT

Pawnee County—Henry Blazer's Wilson 1, ne nw nw 4-1n-10e, caving 903 ft.

COMPLETIONS

Johnson County—W. H. Skelton et al's Rulla 1, c sw sw 24-5n-9e, abnd.

Nemaha County—Palensky's Casey 1, c nw ne 7-5n-13e, Topeka 596 ft, Lansing 860 ft, Miss 1655 ft, Kinderhook 1785 ft, Bematite 1801 ft, Hunton 2025 ft, Maquoketa 2739 ft, Viola 2849 ft, Simpson 3190 ft, St. Peter 3240 ft, Arbuckle 3291 ft, Granite 3300-3306 ft, abnd.

NEW MEXICO

COMPLETION

Lea County—J. W. Brown, Inc., et al's State 1, C lot 11, 4-16s-35e, elev 4043 ft, top anhydrite 1785 ft, salt series 1902-2798 ft, Yates sand 2940 ft, brown lime 3110 ft, red sand 3800 ft, San Andres 4540 ft, abnd 5507 ft.

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OKLAHOMA

FIRST REPORTS

Cotton County—W. J. Winn's Cornelius 1, c sw sw sw 34-3s-12w, spud. H. P. McGoughey's Kinnard 1, ne ne ne 26-5n-12w, Pitts.

Creek County—Major Oil et al's Estate Land Co. 1, se se nw 2-17n-9e, spud.

Jackson County—Rinehart et al's Petzold 1, se se ne 20-3n-20w, dr.

Lincoln County—Superior Oil Co.'s Fouquet 1, c ne nw 17-13n-6e, dr. Big Chief's Barrett 1, c w l sw ne 20-13n-6e, dr. Wilcox Oil & Gas Co.'s Royer 2, nw sw ne 18-14n-6e, lcn. Blackwell Oil & Gas' Dollison 1, nw nw nw 33-15n-5e, rt.

Osage County—Norbla et al's Osage 1, se c se se 29-21n-10e, lcn. C. U. T. Montgomery's Osage 1, nw nw se 21-27n-8e, lcn.

COMPLETIONS

Carter County—Lloyd Sanders' Harmon 1-A, ne se sw 21-1s-2w, sd 292-312, td 315 ft, 300,000 cu ft gas.

Jefferson County—Roy M. Johnson's Hefner 1, se sw ne 30-3s-4w, abnd 210 ft.

Kiowa County—Amerada Petroleum Co.'s Boomer 2, c nw sw ne 1-6n-14w, Pontotoc 564 ft, fresh wtr 612-14 ft, td 746 ft, pb 705 ft, abnd.

Logan County—Deep Rock's Murphy 1, nw nw se 11-17n-2w, Misener 5355 ft, Viola 5473 ft, Dense 5515 ft, Dolomite 5545 ft, 1st Wilcox 5556 ft, 2nd Wilcox 5682-87 ft, show wtr Bartlesville, will abnd.

Love County—Colvin & Hicks' Westheimer 2, c w½ se sw 27-6s-2e, Sdy lime 3011-18 ft, 8000 gals acid, abnd 3022 ft.

Osage County—Black Jack Oil's Osage 1, ne ne sw 29-25n-7e, Lime 1375-1455 ft, Oswego 2272-2350 ft, Mississippi 2747 ft, abnd.

Pontotoc County—Blackwell Oil & Gas' Riddle 1, nw nw ne 9-3n-5e, Sand 857-72 ft, Base Congl. 1040 ft, Miss-Caney 1350 ft, td 1540 ft, 11,000,000 gas.

Pottawatomie County—Aram Pet.'s Trausdale 1, ne ne nw 31-7n-3e, Woodford 4425 ft, Hunton 4463 ft, Sylvan 4800 ft, Viola 4910 ft, Trenton 4965 ft, Bromide 5010 ft, McLish 5155 ft, 2nd Wilcox 5240 ft, abnd 5273 ft.

Seminole County—Keener Oil & Gas' Homestake 1, sw sw nw 28-7n-7e, Senora sd 2124 ft, td 2164 ft in shale, pb 2138 ft, 25 bbls oil, new pool.

Muskogee County—Vierson Drilling Co.'s Frinklea 1, c sw nw 16-11n-19e, abnd 760 ft.

Okfuskee County—Oklahoma Oil Corp. et al's Colbert 1, se se se 26-11n-13e, salt sand 925 ft, sand 1486-1514 ft, sand 2216-22 ft, Wapa. 2545 ft, 1st Cromwell 2812-3329 ft, 2nd Cromwell 2883 ft, sand 2885 ft, 400 ft water in hole, abnd 2887 ft.

Osage County—Joseph Swartz's 3-A (twin) sw sw ne 16-23n-9e, Oswego 1798-2073 ft, Bartles, 2156 ft, td 2170 ft, pump 6 bbls oil. Anderson & Pritchard et al's Osage 1-A, sw ne sw 32-28n-8e, Oswego 2160 ft, Miss 2473 ft, pb 2535½ ft, 25 bbls oil.

Payne County—Atlantic & Mid-Continent's O'Hara 1, c s½ ne nw 18-17n-2e, Woodford 4565 ft, Hunton 4604 ft, Sylvan 4697 ft, Viola 4787 ft, Dense 4813 ft, Dolomite 4852 ft, 1st Wilcox 4867 ft, cored to 2nd Wilcox 4978 ft, pb 4734 ft, abnd.

SOUTHWEST TEXAS

FIRST REPORTS

Bee County—Dirks Bros. & H. Coquat's Harris 1, Sec 9, W. Tuleta, lcn, 9000-ft Wilcox.

Bexar County—W. S. Hill et al's Barker 1, I. Tejida sur 196, 4 mi sw McDonna, mi, 1800 ft Edwards.

Caldwell County—Ogden & Diddle's Copeland 2, Kelley sur, 2 mi se Dale fld, lcn, 3000-ft.

Duval County—H. H. Howell's Escobar 1, San Francisco Gr, Sh 8, 8 mi s Rios, sp, 6500-ft.

Jackson County—J. L. Collins & Co.'s Calloway 1, J. J. Linn sur, 6 mi nw Texana fld, lcn, 6000-ft.

Jim Hogg County—Sun's Jones 1, Agua Nueve de Abajo Gr, 30 mi ne Rio Grande City, lcn, 6000-ft.

Jim Wells County—Porter & Braton's Haverlah 1, J. Reynolds sur 116, 2 mi sw Orange Grove, ru, 5300-ft.

Webb County—Harry E. Murray's Adami 2, sur 338, 1 mi sw Adami fld, lcn, 1100-ft.

COMPLETIONS

Bee County—Shield, Heyser, Heard & Clardy's McKinney 1, Randolph sur, 1 mi se Pettus, abnd 4515 ft. Sun & Arkansas' Baird 1, Roundtree sur, 7 mi sw Beeville, abnd 4565 ft.

Caldwell County—F. J. Adams' Bankers 1, Tyler sur, 4 mi sw Lockhart, abnd 1981 ft.

Duval County—R. Benjamin's Bain 1, Sec 264, 10 mi nw Freer, abnd 1900 ft.

Jackson County—Magnolia's Vordick 1, Branch sur, 1½ mi e LaWard fld, dr to 5247 ft, lost junk in hole, pb and perf 5204-7 ft, comp 2300 gas, 3/16 ch, 1200 lbs tp, 1350 lbs cp; extends fld.

Jim Wells County—Magnolia's Maun 2, orig LaGloria unit 18, LaGloria, td 6901 ft, flowed 167 bbls 39.5-gr oil, 7/64 ch, tp 1425 lbs, cp 1650 lbs, gor 1420/1, perf 6670-6700 ft; also gas-distillate well from perf 6041-60 ft and 6100-12 ft, via dual method; extends fld and opens first commercial oil production in area.

Nueces County—Sam E. Wilson & Gulf Plains' Rivers 1, 1½ mi w Agua Dulce fld, comp 171.9 bpd 42.8-gr oil, ¼ ch, tp 1300 lbs, cp 1900 lbs, gor 840/1; extends fld, opens oil prod w flank structure.

Refugio County—Rutherford & Waldron's Avery 1, Perry Lge, 20 mi n Refugio, abnd 6559 ft.

Webb County—Cash & Reynolds' Kirkpatrick 1, Sec 16, 25 mi n Bruni, abnd 2590 ft, Magnolia's Santos Tomas Ranch 1, Sec 24, 22 mi nw Laredo, abnd 6830 ft.

Wilson County—Shell's Johnson 1, Reynolds sur, 5 mi ne Floresville, abnd 490 ft; Wells 1, Hodges sur, 4 mi sw Nixon, abnd 5000 ft.

NORTH TEXAS

FIRST REPORTS

Archer County—Chas. Peachacek et al's Peachacek 1, 2079 ft from n and 1382 ft from e lines M. Fanning sur A-128, lcn.

Denton County—H. L. Hunt Oil Co.'s T. R. Jones 1, 467 ft from w and 4400 ft from s lines tr, sw part John Thomas sur, mim for Ellenberger test.

Wichita County—Paul H. Sisk et al's Sisk 1, nwc lot 15, Denton CSL, league 2, lcn.

Young County — M. R. Stripe et al's Schlegel 1, nec sw¼ TE&L sec 74, sp.

COMPLETIONS

Archer County—John R. Chambers et al's Abercrombie 1, se cor W. A. Rucker sur A-1110, abnd 1500 ft.

Clay County—Superior Oil Corp.'s Seigler-Shell 1, se cor w-120 ac TE&L sec 3211, top Bend 5770 ft, Barnett shale 6219 ft, Mississippian 6240 ft, abnd 6455 ft.

Jack County—F. Kirk Johnson-Ambassador Oil Corp.'s Shawver 1, sec nw se J. Turner sur A-608, top Ellenberger 6108 ft, abnd 6185 ft.

Young County—Panhandle Ref. Co.'s Allar Co.-Hunt 1, 467 ft s and e of se cor G. N. Smith sur, but in TE&L sec 3409, new pool, Strawn sand 2706-11 ft, pumped 76 bbls oil 5 bbls water initial.

WEST CENTRAL TEXAS

FIRST REPORTS

Coleman County—Jas. C. Ellis & Fred J. Estes' Bridges 1, sec 97-ac tract, ET 107, mim, 3500-ft test.

Taylor County—F. G. Sites & W. C. Turnbow's Turnbow 1, 1656 ft from e and 150 ft from n lines sec 8, blk 460, J. W. Baldwin sur, lcn.

WEST TEXAS

FIRST REPORTS

Bailey County—Broderick & Calvert-Amon G. Carter et al's Hayward-Kuehn 1, c lab 24, league 173, Sutton CSL, lcn 5500-ft test.

Crane County—S. H. & L. Development Co.'s Davey-State 1, north corner GC&SF sec 90, blk Y, lcn.

Hockley County — Anderson-Prichard Oil Corp.-American Drl. Corp.'s Ellwood-Honolulu 1, nwc sec 15, blk A, R. M. Thompson sur, lcn 5500-ft test.

Mitchell County—H. D. McQuain & W. J. Donnelly's Wulfjen 1, c nw sw H&TC sec 5, blk 15, lcn. Gibson Oil Corp.'s Thompson 1, sw nw nw T&P sec 71, blk 27, lcn 3000-ft test.

COMPLETION

Hudspeth County—Haymon Krupp Oil & Land Co.'s Briggs 1, nwc T&P sec 24, blk 73, tsp 7, elev 4016 ft, abnd 6226 ft.

EAST TEXAS

FIRST REPORTS

Franklin County—Ed Parsons and Jerry Hawkins' F. J. Cox 1, se corner Jas. M. Gill sur, mim for Paluxy test.

Houston County—C. B. Culmore et al's G. T. Lundy 1, se corner ne-40 acres of 310-acre tr, John Forbes League, rig.

Marion County—Dean Bros. (Fort Worth), Fee 1, 1780 ft w and 1885 ft s nec 764 ac tr, Ben F. Weatherred sur, lcn.

Navarro County—T. B. Daniel et al's C. C. Mills 1, 200 ft from e and 3000 ft from m/n/n line. T. J. Jordan sur, west Bazette townsite, rig.

COMPLETION

Rockwall County — City of Rockwall's fee 1, top Georgetown 2413 ft, top Paluxy 3260 ft, abnd (water well) 3347 ft.

TEXAS GULF COAST

FIRST REPORTS

Fort Bend County—Atlantic's Kittie Nash Groce 2, Nash dome area, 2675 ft from w l of T. Alsberry sur & 272 ft from s l of lease, 100 ft w of Harrison & Abercrombie's Groce 15 drilled to 4800 ft, approx 1800 ft se of Atlantic's Groce 1, pd 6500 ft, prep to spud.

COMPLETIONS

Chambers County—Dick Schwab's Ferrell 1, East Goose Creek prospect, James Steel sur. Paleo: Discorbis 5543 ft, Heterostegina 5840 ft, Round Marginulina 6062 ft, Flat Marginulint 6153 ft, Frio 6425 ft, td 8015 ft, abnd.

Walker County—Mike Hogg's Lucy C. Smith et al 1, Bear Creek area, 9 mi w Huntsville. Hugh Hampton sur started losing returns 7285 ft due to cavity, abnd.

MEN IN THE INDUSTRY'S NEWS

JAMES D. AIMER, Arkansas-Louisiana Gas Company, was elected president of Shreveport Geological Society for the ensuing year at the October meeting. He succeeds W. B. Weeks. Other new officers elected are: Joseph Purzer, Phillips Petroleum Company, vice president; and Van D. Robinson, Atlantic Refining Company, secretary-treasurer (re-elected). E. O. Buck, assistant deputy petroleum coordinator, Houston, addressed the society on "Functions of the Office of Production Coordinator."

JACK GUITERMAN, scout for The Texas Company in West Texas with headquarters at Midland, has resigned to return to Beaumont, where he will assume charge of oil properties left by his deceased father, and has been succeeded by Al Wadsworth, recent graduate geologist of Bay City, Texas.

GEORGE H. NORTON, geologist for The Atlantic Refining Company, has been transferred from Wichita, Kansas, to Dallas, Texas.

FRED BELEAU, field superintendent for Stanolind Oil & Gas Company at Jennings, was made district superintendent for Louisiana, October 1, working out of the Houston office. At the same time the Louisiana Coastal area was split into three districts with Tony Cobb remaining as superintendent at Hackberry, Ed Maske as field superintendent at Jennings and the new territory will be in charge of T. H. Harder with offices at Lafayette. Harder's territory will be taken from the present Jennings territory and will consist of Anse La Butte, Westwego, and Pine Prairie. Fletcher Kennedy, present production foreman at Anse La Butte, will be transferred to High Island, Texas.

CLENNON C. HEMSELL, geologist for Columbian Fuel Corporation, Texas Panhandle, spoke before Tulsa Geological Society on "Sub-Surface Conditions in Texas County, Oklahoma."

J. J. BURKE, scout in the central Oklahoma district for Gulf Oil Corporation, has been transferred to a special assignment in Illinois.

C. B. BOONE, general chairman Gulf Coast chapter, American Society of Safety Engineers, has announced committees for 1941-42: membership—Sidney L. Mayer, H. M. Jones, D. M. Farrell, Paul Clark, Paul Phillips, George J. Gruber, J. J. Delahide, J. K. Skipton, William Grant, Jr.; program—Kraus Earhart, R. W. Owen, John J. Pierce; publicity—C. A. Koch, Ted Felds, James R. Thompson.

O. H. CREWS, petroleum engineer of Oklahoma City, leaves soon for Talara, Peru, where he will take a position with International Petroleum Corporation.

J. G. WRIGHT, retired superintendent of the Osage Indian agency, Oklahoma, is reported seriously ill in Washington.

S. M. BLEVINS has been appointed to the Mid-Continent sales staff of Larkin Packer Company. He will make Tulsa headquarters and serve as city sales representative in Tulsa, Oklahoma City, Enid, Ponca City, Bartlesville, Dallas and Ft. Worth. Educated at Tulsa University as a petroleum engineer, Blevens worked

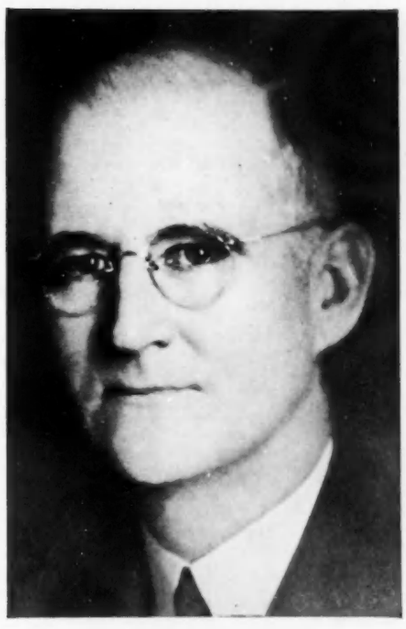
John R. Suman and John F. O'Donohoe Receive Distinguished Service Awards

JOHN R. SUMAN and John F. O'Donohoe were presented Distinguished Service Awards of the Texas Mid-Continent Oil and Gas Association at the annual meeting. In the presentation ceremonies, Suman was praised by George Sawtelle for his attainments in petroleum, engineering and civic service, while O'Donohoe, who was chosen to represent the ranks of oil producers, was paid tribute by L. P. Garrett for his many services to the industry.

John Suman was born April 9, 1890 at Daleville, Indiana, and as a boy used to watch the old cable-tool rigs laboriously dig oil wells. When 16, he moved with his parents to California, where he graduated from Los Angeles High School in 1908. He graduated from the University of California in 1912 with a Bachelor of Science degree in mining engineering. He came to Texas in that year as a geologist for Southern Pacific Railroad, and assisted in making a mineral survey along the railroad's lines. In August, he was transferred to Rio Bravo Oil Company, Southern Pacific subsidiary. His promotion was rapid, and in 1913 he became chief engineer of the company. In 1917 he changed to Roxana Petroleum Company as technical superintendent of Texas and Louisiana operators, but it was only a short time until he was back with Rio Bravo. Suman joined Humble Oil & Refining Company in 1927, became a vice president in 1933. Suman has been noted for his interest in engineering societies, and currently is president of the AIME.

John F. O'Donohoe of Wichita Falls is president of Petroleum Producers Company, and a former president of the Texas Mid-Continent Oil and Gas Association and of the North Texas Oil and Gas Association. He also has served as vice president of the Texas Mid-Continent and as a director of the American Petroleum Institute. He is now a director and member of the executive committee of the Independent Petroleum Association of America, president of Hardin Junior College Board and director of the First National Bank of Wichita Falls. He was educated at Algiers, Louisiana, and Holy Cross College, New Orleans. He entered the oil business in 1904, at the age of 19. His first connection was from 1904-1909 with Evangeline Oil Company of Lafayette, Louisiana, as manager of a loading rack. In 1909 he joined J. M. Guffey Petroleum Company, later to become Gulf Oil Corporation, as a scout. In 1916, he went with The Texas Company at Wichita Falls as head of its land and lease department there. He became general manager of Wichita Falls Fuel & Development Company in 1918, and in 1919 was manager of United Producers Company and in 1920 became associated with Cline Oil Company. A year later he was named president of Petroleum Producers Company.

JOHN R. SUMAN



JOHN F. O'DONOHOE

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for several years in drilling and production. His sales experience includes several years with Frick-Reid Supply Company, and more recently with Gustin-Bacon Company.

ARTHUR A. GARRABRANT, vice president and assistant manager of foreign sales, has been elected a director of The Atlantic Refining Company. He has been with the company 25 years, and is a director of most of its subsidiaries which distribute products in foreign countries.

H. W. STRALEY, III, has returned to Waco, Texas, after spending two months in the East for Eastern Exploration Company.

R. W. FAIR, Tyler producer, was elected president of the Texas Methodist Foundation, succeeding W. W. Fondren, Houston oil man who died recently.

FREDERICK G. CLAPP, geologist of New York City, has established temporary headquarters at Chickasha, Oklahoma, while negotiating a wildcat project in the Cement area. Prior to the current European hostilities he was in Persia as oil adviser to the government.

H. P. STOVER, Gaso Pump & Burner Manufacturing Company, is the new chairman and Glenver McConnell, Shell Oil Company engineer, is vice chairman, of the oil activities committee of the Tulsa Chamber of Commerce.

CARL L. PATE, formerly with Oklahoma Oil Corporation, and J. R. Lavens, Jr., formerly with C. L. McMahon, oil producer, as petroleum engineer, have formed Oil Field Research Laboratories, Chanute, Kansas. The company will engage in water analysis, treating and as consultants in development and secondary recovery projects.

JOHN H. MURRELL, former engineer and geologist in East Texas, has been added to the District 3 staff of OPC, Houston, as conservation engineer.

PERCY C. JONES, 63, president of The S. M. Jones Company, Toledo, Ohio, died at Beaumont, Texas, October 9, while attending the convention of the Texas Mid-Continent Oil & Gas Association. Jones opened the first oil field supply store, the Acme Supply Company, at Spindletop after the Lucas gusher opened the field in 1901. He was attending the celebration of the discovery of the gusher when stricken. He was a native of Pennsylvania.

S. A. PATTERSON, 74, died at his home in Marlin, October 7. He was involved in the early development of the Corsicana field in 1896 and in the drilling of the Lucas gusher at Spindletop in 1901. His operations were spread through many of the earlier boom developments of Texas. His children, likewise, have been involved in the oil business, they being Bryan Patterson, Mrs. Al Buchanan, Mrs. Troy Atkins and Albert Patterson.

ROGER PUTNAM, 47, died at Alice, September 26. He was well known for his wildcatting activities in Southwest Texas which resulted in the discovery of production in several Mirando district fields.

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Squeaks from the Bull Wheel

Matter of Form

"Sorry, madam, but licenses are issued only when your form is filled out properly."

"Why, I like your nerve, sir. We can get married, no matter what I look like."

Proved It

"That husband of mine is a worm if there ever was one."

"Yes, I just saw a chicken pick him up."

Experience

Constable (to a gentleman staggering home at 3 a.m.). "Where are you going to at this time of night?"

"To a lecture."

Premature

"What you need, my dear young lady, is a little sun and air."

"Why, Doctor, how dare you! Why, I'm not even married."

Leave it to Science

"Doctor, I feel like killing myself. What shall I do?"

"Just leave it to me."

Accommodation

The seedy individual entered the bank in the grand manner. In his grimy hand he held a check for fifty cents. He approached the cashier's window and presented the check with a flourish.

"Here, my good man," he said loftily, "you will kindly cash this for me. And, mind you, I haven't all day to wait."

The cashier glanced up. He took the check, examined it, then reached into the change drawer.

"How will you have it? he asked. "Heads or tails?"

Wish

Oh for the days when comic sheets
Were light and airy bubbles,
Instead of the pages now replete
With fabricated troubles.
—F. E. D. (Up).

In That Case

Professor—Will you men in the back of the room please stop exchanging notes?

Student—They aren't notes, sir, they are cards. We're playing bridge.

Professor—Oh, I beg your pardon.

Unfinished Business

You wish to see the young man injured in the motor accident? You are the lady he was with?

Yes, I thought it would be only fair to give him the kiss he was trying for.

Dietary

A teacher had dwelt with wearisome iteration on the part played by carbohydrates, proteins and fats respectively in the upkeep of the human body. At the end of the lesson the usual test questions were put.

"Can any girl tell me the three foods required to keep the body in health?"

There was silence till one girl replied: "Breakfast, lunch and dinner."

An Old American Custom

A French girl visiting this country was introduced to an elderly bishop, who, she was told, was about to celebrate his Golden Wedding.

"Wot ees zees 'Golden Wedding' you speak of?" she asked. "We do not have eet een France."

"That," said the Bishop, "means that this woman and I have lived together for fifty years."

"Ah, zat ees beautiful!" the girl breathed. "So now you are getting married, no?"

Class Prejudice

Truck Driver—Didn't you see me signal you to stop?

Haughty Motorist — Yes, but you don't think I'll take orders from you, do you?

Not Potent Enough

Just let a drop of this poison spray touch a bug and he's already got one foot in the grave.

Haven't you got something that's a little more thorough; I want it for centipedes.

"No Time for Foolishness!"

Aunt Sarah was a very religious woman, while her husband, a prominent lawyer of his day, was the reverse and rarely attended church.

One summer afternoon a very severe thunderstorm came suddenly and Aunt Sarah was much alarmed. She rushed into the room where her husband was sitting and excitedly said: "I am very much alarmed as this is a very severe storm." The lawyer looked up from his desk and quietly said: "And where is your faith, Sarah?" To which she hastily replied: "This is no time for foolishness."

Naval Communique

In the Navy, one who overstays his leave of absence is apt to incur extra police duty, or have his salary docked. A seaman on the U.S.S. *Long*, according to the *Nabisco Magazine*, wrote this memorandum to his commanding officer, explaining two days overleave:

"On September 1 I left the ship on ten days' leave at my brother's farm in Arkansas. On September 11 he decided to repair the silo right away because he had to get his corn in it. I rigged up a barrel hoist to the top. Then we hauled up several hundred brick. This later turned out to be too many bricks. After my brother got all the brickwork repaired, there was a lot of brick at the top on a working platform. So I climbed down the ladder and hauled the barrel all the way up. Then I climbed back up the ladder. Then I untied the line to let the bricks down, and climbed down again to hold the line.

"But I found the barrel of brick heavier than I was, and when the barrel started down, I started up. I was going pretty fast at the top and bumped my head. My fingers also got pinched in the pulley block. But at the same time the barrel hit the ground and the bottom fell out, letting all the brick out. I was heavier than the empty barrel, and started down again. I got burned on the leg by the other rope as I went down until I met the barrel coming up, which went by faster than before and took the skin off my shins. I landed pretty hard.

"At that time I lost my presence of mind and let go of the line, and the barrel came down again and hit me squarely on the head. The doctor wouldn't let me start back to the ship until September 16, which made me two days overleave, which I don't think is too much under the circumstances."

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NOTES FOR THE Equipment Buyer and User

Pressure Gauge

THE BROWN INSTRUMENT COMPANY

The Brown Instrument Company, Wayne and Roberts Avenues, Philadelphia, now offers a rectangular case bourdon tube pressure gauge to match its line of rectangular case instruments. This gauge is strongly constructed, possesses greater accuracy, and has a patented "recalibrator" which provides a means for easily and accurately setting the pen on zero. In addition to the "recalibrator" there is a micrometer zero adjustment on the pen arm itself.

The methods of construction used in the gauges, consisting of a one-piece casting supporting the bourdon tube, the gear and pinion, and the pen-arm shaft, makes it possible to have the whole assembly installed in the case as one completely calibrated unit. This construction simplifies the replacement problems. New bourdon tube units can be easily installed in the field.

A feature of the gauge is the "locktite" method of sealing the ends of the stainless-steel tubes which are used in the gauge for certain pressure ranges. With this method of sealing, the heat-treatment and original calibration of the tube cannot be affected, as might be the case if the tubes were closed by welding.

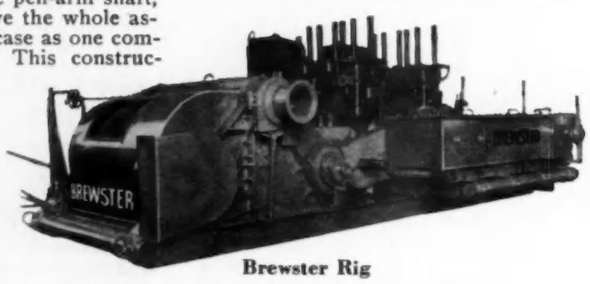
Another constructional advantage is the use of dissimilar metals at the bearing surfaces. Pinions and shafts are made of stainless steel and bushings are made of a high-Brinell-test monel. Accuracy during operation is assured by the wide hob-cut pinion and the heavy gear segment. All of the connecting links and levers are made from stainless steel and all bearings are bushed. Bulletin No. 3-5 describes this new instrument.

Rig

BREWSTER COMPANY, INC.

The Brewster VO-200 rig is said to be tougher, more compact and more powerful than ever and is designed for easy drilling to 8000 feet. Featured is a 500 horsepower oil-bath-lubricated compound for the two 225 horsepower motors. An oil-bath transmission is also employed, having 4 speeds forward and 1 reverse.

To add flexibility and ease of operation, friction clutches are used on the rotary drive, drawworks drive, and pump drive. The pump drive has two speeds.



Brewster Rig

Other features include 10 x 46-inch water-cooled brakes; 7¼-inch drum shaft of alloy steel, heat treated and extended for mounting hydromatic brake; roller chains used throughout on all drives, compound and transmission.

Sucker Rod Wiper

PATTERSON-BALLAGH CORPORATION

Patterson-Ballagh Corporation, 1900 East 65th Street, Los Angeles, has designed a new type wiper for removing excess paraffin wax that gathers on sucker rods in some producing areas.

Paraffin is prevented from dropping back into the tubing by a reinforced cone-shaped rubber and is by-passed to the outside through 3-inch pipe outlets. The cone-shaped rubber is replaceable.

Designed to accommodate various sizes of sucker rods, the wiper is identical in its rod wiping effect with the regular "Universal" sucker rod wiper, produced by Patterson-Ballagh Corporation. Twin discs of reinforced rubber are held in a specially designed steel housing and float freely therein. This allows the rods to move up and down, and the rubbers strip the rods of oil. These discs are flexible to the extent that they allow the couplings and pump to pass through their center aperture without injury. The action is similar to the Patterson-Ballagh Pipe Wiper which strips drill pipe, tubing, tool joints and protectors as they emerge from the hole.

Patterson-Ballagh Sucker Rod Wiper

Complete assembly of this new sucker rod wiper has a height of less than 7-inch and is universal in its fittings to meet the operator's needs. A 2-, 2½- or 3-inch standard pipe bushing assembly is included with the shipment, and also an initial set of wiping discs. Rods from ⅝- to 1¼-inch on the same string are effectively stripped with this wiper. It will handle medium pressures which are sealed off by contact of the discs with the inside surface of the cover. As is the case with the "Universal" Rod Wiper, the cover will be supplied with either the plain or safety cap, with latches.

WEIGHT INDICATOR POINTS
THEY STILL HAVEN'T FOUND a way to get blood out of a turnip.
So also with drilling instruments that are obsolete or run down at the heels. You simply can't expect them to give the information you need to get the most in drilling efficiency . . . the most in equipment performance . . . the most well per dollar spent.
So for economy's sake on major drilling jobs, put your drilling control in the hands of the instrument made for the work—the Martin-Decker "Sealtite," centralized right in front of your driller!
MARTIN-DECKER CORP. LONG BEACH, CALIF.

Surveying Instrument

SPERRY-SUN WELL SURVEYING COMPANY

Sperry-Sun Well Surveying Company, 1608 Walnut Street, Philadelphia, has announced development of a new well surveying instrument, the E-C Inclinometer, operated by dry-cell batteries on electro-chemical principals, for recording hole deviation.

Outstanding feature of the E-C Inclinometer is the fact that no record

Cross Section

Carrying Case

Record Disc

can be made until the instrument comes to rest at the depth where the information is desired. Another feature is the speed at which the recordings are made. Having no clock, the E-C Inclinometer can be lowered and raised at a speed of 800-1000 feet per minute. Within 45 seconds after the instrument comes to rest at the desired depth, the record is made and the E-C Inclinometer can be withdrawn or lowered for the making of additional records. Several records at various depths can be obtained with one lowering. The longer the period allowed for making the record, the larger is the white dot on the recording disc. Fifteen seconds is a sufficient differential in recording time to readily distinguish the readings.

The multiple recording features and the high speed of operation assure a minimum loss of rig time. The E-C Inclinometer is small and compact, the outside diameter of the protective casing being only 1-5/16 inches. It readily passes through a small tool joint.

Roebling Celebrates Century Of Rope Manufacturing

A century of business was celebrated recently by John A. Roebling's Sons Company, Roebling and Trenton, New Jersey.

John A. Roebling, founder of the organization, sold his first wire rope in 1841. The rope had been made in a meadow behind his Saxonburg, Pennsylvania, farm, on the crudest sort of equipment with the help of his farmer neighbors as workmen. It was shortly thereafter that Roebling adapted his new rope to the suspension bridge principle. In 1848, Roebling bought a 3-acre tract of land in Trenton to set up a factory. Today's main office building stands on the land occupied by these first buildings.

Today, 417 acres of plant space accommodate 258 buildings with over 4,500,000 square feet of floor space. Payrolls carry more than 6200 names, a nationwide sales organization of branch offices and warehouses, and many distributors, reaches every section of the country.

Norvell-Wilder Organization Dates Back to Spindletop

Oldtimers attending the convention of the Texas Mid-Continent Oil & Gas Association at Beaumont last week recalled that many oil and supply companies had their origin there following discovery of Spindletop. Hundreds of firms mushroomed, many of which are actively engaged in the industry today.

A typical company was the Lone Acre Oil Company, founded by Lipscomb Wilder. A pioneer in the Spindletop field, Wilder promoted, planned and invested in oil companies. He organized the Lone Acre company in 1902 operating in Sour Lake, Batson, Barbers Hill and Humble.

In 1910, he organized Norvell-Wilder Supply Company with himself as president, R. H. Wilder, vice president, W. A. Martin, secretary and treasurer. These officers with John N. Gilbert, S. W. Pipkin, B. R. Norvell and A. Olsen comprised the board of directors. Norvell and Wilder both died in 1925; by that time the company was operating unit stores in Fort Worth, Houston, Ranger and Mexia.

Welders

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pennsylvania, has issued Bulletin B-2285 describing Flexarc a-c welders for every type of welding job ranging from light gauge sheet to sustained, heavy-duty industrial fabrication. Current ranges of these welders are from 20 to 625 amperes.

Improvements in a-c welder construction are discussed with a note on new type electrodes. Hints on the selection of a-c welding equipment include descriptions and ratings of the units. The bulletin is well illustrated to make explanations of the welder parts easy to follow.

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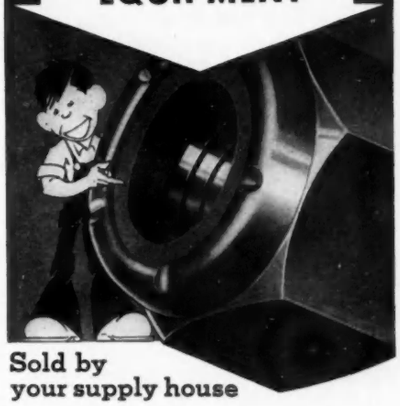

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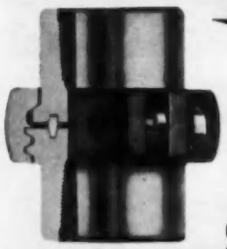

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See Page 1325 in COMPOSITE CATALOG, 1941

JUSTRITE MANUFACTURING CO.

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California Nomads Plan Entertainment at A.P.I.

Final arrangements have been completed for an outstanding social event to be held during the American Petroleum Institute meeting in San Francisco, November 3 to 7.

The California Chapter of Nomads will be host to visiting Nomads from Houston, Tulsa, and New York, to foreign oil men in attendance at the convention, as well as certain officials of the institute and distinguished guests from the oil industry.

Bart Gillespie is chairman of the arrangements committee, and the San Francisco Stock Exchange Club has been selected as the locale of the function which is scheduled for Wednesday, November 5, from 5:00 to 8:00 p.m. The function will be invitational with guests limited to 300.

A registration booth is being set up adjacent to the institute registration offices to obtain registration of Nomads and foreign oil men. The booth will distribute information on the San Francisco Bay area, as well as on Los Angeles and Southern California.

Sheaves

Allis-Chalmers Manufacturing Company, Milwaukee, Wis., has issued bulletin B-6047 describing Allis-Chalmers Texsteel and Texdrive Sheaves—steel and cast iron sheaves for Texrope drives from fractional to 25 horsepower.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of The OIL WEEKLY, published weekly at Houston, Texas, for October, 1941.

State of Texas, County of Harris, ss:

Before me, a Notary Public in and for the State and County aforesaid, personally appeared A. L. Burns, who having been duly sworn according to law, deposes and says that he is the Business Manager of THE OIL WEEKLY and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Ray L. Dudley, 3381 Chevy Chase, Houston, Texas; Editorial Director, S. W. Robinson, 5002 Scotland, Houston, Texas; Editor, Warren L. Baker, 1613 Woodhead, Houston, Texas; Managing Editor, J. Kent Ridley, 612 Branard, Houston, Texas; Business Manager, A. L. Burns, 1751 Marshall, Houston, Texas.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The Gulf Publishing Company, Houston, Texas; James Anderson, Houston, Texas; A. L. Burns, Houston, Texas; J. F. Carter, Jr., Tulsa, Okla.; Ray L. Dudley, Independent Executor and Trustee for Estate of Dr. N. L. Dudley, Deceased, Houston, Texas; Ray L. Dudley, Houston, Texas; W. S. Farish, Houston, Texas; Wm. V. Gross, Pipe Creek, Texas; Howard R. Hughes, Houston, Texas; Mrs. Anita S. Lane, Houston, Texas; Chas. H. Lane, Houston, Texas; Wallace E. Pratt, New York, N. Y.; J. Kent Ridley, Houston, Texas; S. W. Robinson, Houston, Texas; Mrs. Maude G. Sterling, LaPorte, Texas; R. P. Swinsky, New York, N. Y.; O. R. Waller, Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

A. L. BURNS, Business Manager.

Sworn to and subscribed before me this 24th day of September, 1941.

P. J. AUCOIN,
(Seal) Notary Public, Harris County, Texas.
(My commission expires June 1, 1943.)

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